SOUTH DEALER ISSUE
Pages 9-16

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

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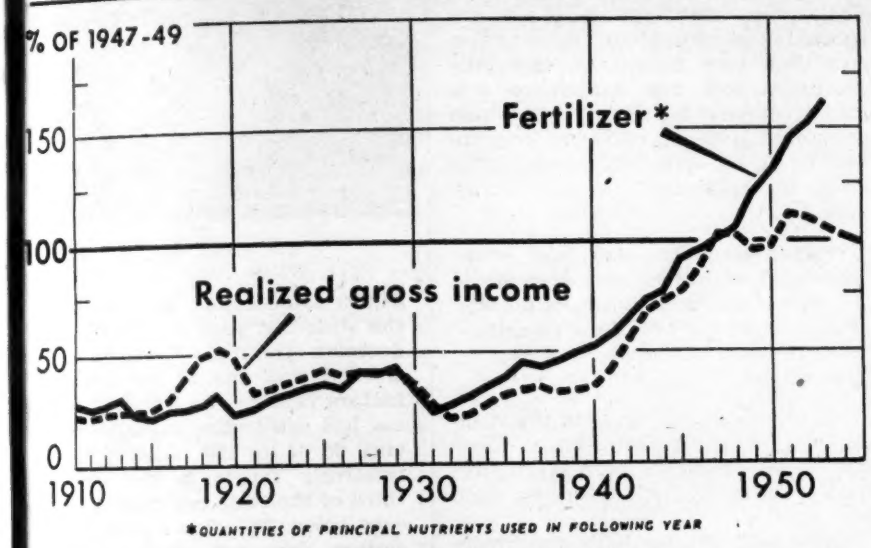
Preliminary USDA Report Says:

Fertilizer Tonnage Dips, Nutrient Use Gains



FERTILIZER USE-FARM INCOME—The old relationship between fluctuation in gross income and fertilizer consumption no longer seems to apply, the U.S. Department of Agriculture points out in the graph above, taken from the department's agricultural outlook charts for 1956. In 1948 the index number for realized gross farm income was 104 (1947-49 equals 100) while the index number for use of principal plant nutrients was 100. In 1954 the farm income number has dipped to 98, while the plant nutrient index had jumped to 161.

WASHINGTON—Commercial fertilizer use in the U.S. and territories of Hawaii, Puerto Rico and Alaska for the fiscal year ended last June 30 totaled 22,468,000 tons, according to the preliminary fertilizer consumption report issued by the U.S. Department of Agriculture last week.

This quantity represents a decrease of 1.3% or 305,000 tons, from 1953-54 consumption of 22,773,000 tons.

However, the estimated quantity of primary plant nutrients in fertilizer consumed in 1954-55 was 6,047,000 tons, 2.6% or 151,000 tons more than the 5,896,000 tons used in 1953-54.

The preliminary report was prepared by Walter Scholl, Hilda M. Wallace and Esther I. Fox, Agricultural Research Service, USDA, Beltsville, Md.

Consumption of commercial mixtures in 1954-55 was estimated to be 15,151,000 tons, a decrease of 2.5% or 390,000 tons. Use of materials for direct application was estimated at 7,317,000 tons, an increase of 1.2% or 85,000 tons.

Included in the above total of materials is 6,532,000 tons of products containing one or more of the primary nutrients and 785,000 tons of the secondary and trace element materials which do not contain these elements.

The consumption of these fertilizers was, respectively, 85,000 tons (1.3%) less and 170,000 tons (27.5%) more than in 1953-54. The change in tonnage of the secondary and trace element materials was caused mainly by the increased use of gypsum in the Pacific region.

In all the central regions, where approximately 48% of the tonnage of fertilizers was consumed, consumption was from 1.7 to 8.7% lower than during the 1953-54 season. At the same time, consumption was higher by 0.1 to 17.0% in all of the other regions and the territories.

The largest decrease in tonnage in both mixtures and materials was in the East North Central region. The decline in mixtures was not accountable to any particular grade or group of grades, but that of materials was largely due to lowered consumption of phosphate rock for direct application. Consumption of phosphate rock, in this region, was approximately

(Continued on page 4)

Phytopathologists Describe New Methods for Control of Plant Disease and Nematodes

ATLANTA, GA.—Plant pathologists from many parts of the U.S. gathered at the Atlanta Biltmore Hotel here for the 47th annual meeting of the American Phytopathological Society Dec. 27-30. The convention was held in conjunction with the American Society for the Advancement of Science and the Southern Division of the APS.

Dr. Helen Hart, University of Minnesota, St. Paul, became president of the APS at the meeting, to succeed James H. Jensen, Iowa State College, Ames.

A fungicide colloquium was held on the afternoon of Dec. 28, with Dr. L. Gordon Utter, Diamond Alkali Co., Cleveland, Ohio, presiding. Appearing on this portion were Winton B. Rankin, assistant to the commissioner, Federal Food and Drug Administration, Department of Health, Education and Welfare, Washington, D.C.; Dr. Harry C. Young, Ohio Agricultural Experiment Station, Wooster, Ohio; J. N. Sasser, North Carolina State College, Raleigh; and Gordon A. Brandes, Rohm & Haas Co., Philadelphia.

The colloquium also afforded industry representatives an opportunity

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Phytopaths Hear of Antibiotic Control Of Virus Disease

ATLANTA — Successful antibiotic control of two vegetable diseases and the bacterial leaf spot disease of sesame was reported at the American Phytopathological Society meeting here Dec. 29.

Experiments with streptomycin indicate that this antibiotic may control downy mildew of lima beans and late blight of tomatoes, according to a report by W. J. Zaumeyer, S. P. Doolittle and R. E. Wester, all of the USDA research center at Beltsville, Md.

Another USDA scientist, C. A. Thomas, reported that streptomycin successfully controlled bac-

(Continued on page 17)

Korea in Market For 310,000 Metric Tons of Fertilizer

WASHINGTON — The government of Korea is in the market for 250,000 metric tons of nitrogenous fertilizer and 60,000 metric tons of phosphatic fertilizer, according to the Office of Small Business of the International Cooperation Administration.

The buying authority is the Office of Supply, government of the Republic of Korea, Seoul. The bidding deadline is Jan. 12, 1956. Copies of instructions previously issued by ICA may be obtained from the administration's offices at 815 Connecticut Avenue, N.W., Washington 25, D.C. Specifications and conditions may be obtained from the Korean Embassy, 2322 Massachusetts Avenue, Washington.

Phosphoric Acid Production Sets Record in October

WASHINGTON — Production of phosphoric acid during October totaled 320,269 short tons, for a new monthly record, according to the U.S. Department of Commerce. Output in October, 1954, was 245,893 tons.

Production of synthetic anhydrous ammonia in October totaled 265,926 short tons, compared with 230,098 short tons in October a year earlier.

October output of fertilizer grade ammonium nitrate also showed a gain to 149,723 short tons from 142,833 a year earlier. Production of synthetic ammonium sulfate was 93,069 short tons in October, up from 78,602 a year earlier.

Du Pont Selects Site in Kentucky

WILMINGTON—The du Pont Co. has announced the selection of a 900-acre site for possible future construction of a general purpose chemical plant near Maysville, Ky.

The firm said it had no immediate building plans for the land, located on the Ohio River, four miles west of Maysville and some 65 miles east of Cincinnati.

Sulphur Output Hits New Record in 1955

Production Reaches 6,900,000 Long Tons

NEW YORK—Production and consumption of U.S. sulphur—in keeping with the high rate of industrial activity—reached new records in 1955.

Production of this versatile mineral increased to an estimated 6,900,000 long tons in 1955, or 250,000 tons more than in 1954, while domestic consumption plus exports rose 400,000 tons to an estimated 7,100,000 tons, according to Langbourne M. Williams, president of Freeport Sulphur Co.

Most of the new production came from the salt dome deposits of Louisiana and Texas mined by the Frasch hot water process. These mines—the major source of U.S. sulphur—produced an estimated 5,700,000 tons compared with 5,515,000 tons in 1954.

(Continued on page 20)

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Kansas Fertilizer Group Is Told of Excellent Response From Use of Superphosphate

MANHATTAN, KANSAS—Drouth was more severe on some Kansas State College soil fertility tests in 1955 than in 1954, Dr. F. W. Smith, agronomist at the college, reported at the 1955 soil fertility conference held here Dec. 12. Dr. Smith, chairman of the annual conference, pointed out that research results from the past few years should be good guides for farmers so long as the present cycle of weather continues.

Generally excellent response from phosphatic fertilizer on wheat has continued throughout most of eastern and central Kansas. Five-year results from phosphate treatments at Mound Valley, in southeastern Kansas, showed superphosphate more effective than rock phosphate, especially on limed soil, the conference was told. This year both corn and wheat responded little to phosphate on unlimed soil, but excellent results came from superphosphate at 150 lb. an acre.

Superphosphate also has been more effective than rock phosphate on wheat at Hutchinson, while alfalfa responded best to a combination of rock phosphate and superphosphate.

Best 1955 wheat yields in the Kansas test plots was 58.7 bu. at Powhattan, in northeastern Kansas, where 25 lb. of potassium an acre was applied.

Only half of the 1955 corn tests was harvested, since drouth cut yields to near zero. Likewise, drouth was too severe for valid fertilizer tests in the eight milo fertilizer test plots managed by K-State.

Deep tillage has not paid on tests with problem soils in Kansas, J. A. Hobbs, Kansas State College agronomist, reported.

Mr. Hobbs said it appears that swelling of the soil when it is wet soon closes cracks and fissures left by deep tillage implements. The theory that breaking up hard layers of soil caused by cultivation or by soil development processes has caused many to try deep tillage, the K-State scientist said, but tentative recommendations are that the extra cost of such tillage does not pay.

Although in theory, breaking up the hard layers improves root and moisture penetration, the K-State experiments, so far, have not verified this assumption. Large pores below the surface of the soil not only do not contribute to water soaking down, but are the last ones to be filled with water, Mr. Hobbs said.

Comparing soil samples from check plots and those deeply tilled at Garden City showed no increase in moisture to six feet deep during summer fallowing in 1953 and 1955.

At the Colby branch station, infiltration rates were higher in the check plot than in the plot chiseled deeply. At the Hays branch station no difference in moisture storage could be credited to deep tillage, and chiseling 24 inches deep did not improve infiltration from rains in that area, it was reported.

Subsoiling on a farm near Alta Vista improved infiltration rate only slightly. Plots chiseled 24 inches deep at Pratt let water filter in only slightly faster for one hour and then rates of infiltration were about the same as in the check plots. Mr. Hobbs emphasized that he was reporting only preliminary findings as none of the studies has been in progress more than three years.

Glenn W. Hardy, Kansas extension specialist in soil testing, reported that slightly more than 24,000 soil samples were tested in the state last year. That is a 23.5% decrease from the previous year. Drouth was one of the principal factors causing the decrease. Kansas has soil-testing laboratories in only 60 of its 105 counties. Soil is relatively fertile in the western third of the state and rainfall averages below 20 inches a year, so the college does not recommend soil tests for that area, except for fields under irrigation.

Dr. F. W. Smith

Following irrigation a few years, southwestern Kansas soils respond to nitrogenous fertilization, L. V. Withee, assistant agronomist at the college, reported. Tests on land of cooperating farmers in that area of the state showed good response to nitrogen from irrigated milo and from irrigated wheat. In the tests with wheat, it made no difference whether the nitrogen was applied at planting time or topdressed in the spring.

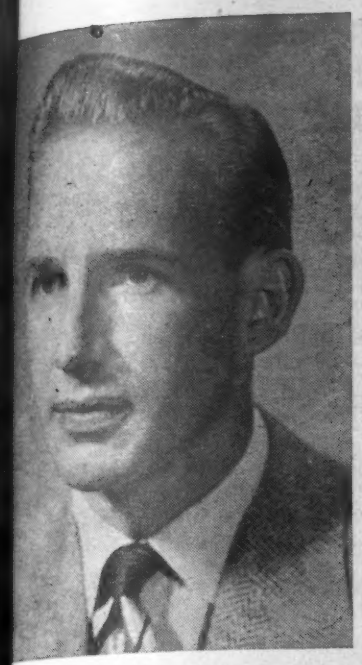
Prof. Roscoe Ellis found phosphorus in rock phosphate most available to oats at pH 5.5 with a gradual decrease in phosphorus availability to higher pH levels. This is explained by the decrease in solubility of rock phosphate at the higher pH levels. Phosphorus in superphosphate was the most available to oats at pH 6.7, which agrees with many investigators who say soils should be limed to a pH between 6.5 and 7.0 for best results with superphosphate.

Chairman Smith told conferees that the fertilizer conference in Kansas has grown the past eight years "in about the same manner as the sales of chemical fertilizers have increased."

The Kansas fertilizer conference's sole sponsor is Kansas State College. It has no officers, other than Dr. Smith, who is its chairman ex officio as head of soil fertility studies in the state. Mr. Smith thanked industry for its help, both financial and otherwise, declaring that without the aid of industry it would be impossible to present the annual affair.

MOISTURE SUPPLY GOOD

FORT COLLINS, COLO.—Moisture conditions on the eastern Colorado plains this fall are described as more favorable than they have been for the past two years. Carl Herzman, extension conservation specialist at Colorado A&M College, says precipitation has been spotty during the summer and fall. "But," he points out, "we're headed into the winter in fairly good shape."



Dr. J. Lynn Mellor

NS OLIN MATHIESON—Dr. J. n Mellor has joined the agronomy f of Olin Mathieson Chemical poration's western fertilizer divi-. Formerly assistant professor of s at the University of Wyoming, Mellor will now be headquartered Phoenix, Ariz. His work will be centrated with research, develop-t and promotion of Ammo-Phos er-soluble fertilizers, anhydrous monia, other chemicals for agri-ure and portable sprinkler irriga-systems. Dr. Mellor is a grad-e of Utah State Agricultural Col-; took his master's degree from orado A&M College and his doc-te from North Carolina State lege.

sticide Meeting Is t for North Carolina

ALEIGH, N.C.—Speakers cover-the subjects of insecticides, herbi-s, fungicides and rodenticides will featured at the eighth annual Pes-de School at North Carolina State lege here Jan. 10-11.

he morning session of Jan. 10 will under the chairmanship of W. G. tmoreland, extension agronomy cialist in weed control. An ad-s of welcome will be presented by L. Lovvorn, while A. S. Crafts W. A. Harvey, both of the Uni-ity of California, Davis, will k on research and extension pro-ms in connection with weed con-

Other speakers, G. C. Klingman d O. E. Rud, of North Carolina te College and L. C. Whitehead, S. Department of Interior fish d wildlife supervisor, will com-te the morning's session.

. R. Garriss, extension plant ologist, will preside at the after-n session of Jan. 10, with nine kers scheduled to appear on var-portions of the program. Mr. riss will present the fungicide re-mendations for 1956, while the wing speakers will discuss a num-of plant diseases and control ods: T. T. Hebert, F. A. Todd, Ferguson, J. N. Sasser, L. W. sen, J. C. Wells, C. N. Clayton C. J. Nusbaum, all of North lina State.

he final morning's session on 11, will be under the chair-ship of H. Eldon Scott, exten-entomologist. R. O. White, cultural Research Service, A, will discuss the Miller ndment of the Food and Drug and various reports on re-ch progress will be submitted L. Rabb, F. E. Guthrie, C. mith and R. T. Gast, all of department of entomology.

lowing a recess, further reports e presented by W. J. Mistric, Dogger, W. M. Kulash, C. H. and G. D. Jones.

Chemical Industry Leads in Expenditure For Basic Research

WASHINGTON — "The chemical industry far exceeds all others in the magnitude of its basic research program," says the National Science Foundation in its preliminary report on a survey of science and engineering in American industry released here.

Estimated at $38 million, the basic research cost for the chemical industry represented 25% of the total expenditures for basic research by all industry in 1953. In terms of the proportion of research and development expenditures allocated to basic research, chemicals also lead with about 10% of all cost incurred for basic research. Applied research and development outlay totaled $323.1 million. Total cost for all chemical industry research and development in 1953 was $361.1 million.

In commenting on the National Science Foundation report, General J. E. Hull, U.S.A. (Ret.), president of the Manufacturing Chemists' Assn., said:

"All the material advantages we now enjoy we owe to successful research. Basic research is the pump-primer that makes applied research and development possible. It is the keystone to further progress. While the chemical industry has always been a research pacesetter, many of us feel that we should be stepping up our own basic research activities. The NSF is to be commended for its timely and valuable analysis of the status of basic research today."

Basic research in chemistry accounted for two thirds of the chemical industry's $38 million expenditure for basic research in 1953. The balance was invested principally in medical, agricultural and biological sciences.

According to the NSF study, the chemical industry likewise led all industry in the number of scientists and engineers employed. In January, 1954, there was 62,700 scientists and engineers in the industry, or one out of twelve of total chemical employment. Of these, the largest number, or 26,000, were engineers. The second largest classification was chemists, of which there were 23,400.

The chemical industry employed about 39% of the total number of chemists in private industry.

MEXICAN BEAN BEETLE ERADICATED

VENTURA, CAL. — The Mexican bean beetle has been eradicated from California's only known infestation in Ventura County, according to the California Department of Agriculture. The department's Bureau of Entomology reports that, following a carefully planned treatment program, no survivors have been found since July 27, 1950. The beetle was discovered in the county in 1946. The first infestation occurred in 25 acres of beans, and it was estimated that there were more than four million adult beetles in the field.

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FERTILIZER CONSUMPTION

(Continued from page 1)

405,000 tons compared with 606,379 tons during the 1953-54 season.

Both mixtures and materials increased in the New England region, the increase in materials being a reflection of the return to superphosphate for direct application. In the Middle Atlantic and East South Central regions, the tonnage of phosphates for direct application was generally lower than in 1953-54.

The relatively high percentage increase in tonnage of materials in the Pacific region was, aside from the increased tonnage of gypsum, due considerably to the increase in tonnage of anhydrous and, in particular, aqueous ammonia, according to the report.

The 1954-55 primary nutrient total comprises 1,984,000 tons of nitrogen, 2,228,000 tons of available P_2O_5, and 1,835,000 tons of K_2O. These quantities represent increases for nitrogen of 136,000 tons (7.4%), for K_2O 29,000 tons (1.6%), and for available P_2O_5 a decrease of 14,000 tons (0 6%) from their consumption in 1953-54.

Consumption of primary nutrients supplied by mixed fertilizers was estimated to be 4,203,000 tons. This total comprises 814,000 tons of nitrogen, 1,776,000 tons of available P_2O_5, and 1,613,000 tons of K_2O.

These figures represent 4.6% more nitrogen, 1.4% less available P_2O_5, and 1.1% more K_2O than those for 1953-54.

Materials used for direct application supplied 1,170,000 tons of nitrogen, 453,000 tons of available P_2O_5, and 221,000 tons of K_2O. These tonnages represent increases in nitrogen of 9.4%; available P_2O_5, 2.8%, and K_2O, 5.2% above those for 1953-54.

Of the primary nutrients, only nitrogen showed a nation-wide increase. This circumstance reflects the current trend towards higher nitrogen fertilizers, according to the report. The average nitrogen content of mixed fertilizers was 5.4% and of primary nutrient materials 17.9% compared with 5.01% and 16.16%, respectively, in 1953-54.

Regional changes in the amount of available P_2O_5 supplied by fertilizers compared with 1953-54 varied from a decrease of 6.7% in the East South Central Region to an increase of 13.9% in the New England region.

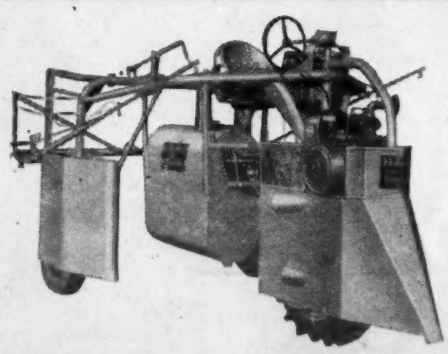
The average content of available P_2O_5 in all mixtures consumed was but 11.7% compared with 11.59% in 1953-54. The four regions showing net increases in available P_2O_5 are New England, an increase in both mixtures and materials; West North Central, a 23% increase supplied by materials, while in mixtures a decrease of 2.7%; West South Central, approximately 5% increase from both mixtures and materials; and in the Pacific, a 14.7% increase from mixtures and 7.0% increase from materials.

Approximately 27% of the total consumption of available P_2O_5 was used in the West North Central region. This area is a large consumer of the ammonium phosphates (11-48, 13-39, 16-20 grades) and triple superphosphate. Apparent consumption of these materials increased approximately 44% reflecting the large increase in available P_2O_5.

Although the national consumption of K_2O showed a net increased use, there was a net decrease in consumption in the East North Central, East South Central and West South Central regions. The decrease is largely reflected in the decrease in consumption of mixtures and only a very slight change in the average K_2O content of mixtures used in these regions. The high percentage increase in the Mountain region is not significant as total use in this region is very small.

The national increase in use of K_2O is reflected more generally by an increase in use of potash in mixtures rather than the use of potash materials for direct application. The national average of K_2O in mixtures increased from 10.27% in 1953-54 to 10.6% in 1954-55

Total nutrients in all mixtures consumed in the U.S. and territories averaged 27.7% compared with 26.87% in 1953-54 and for all primary nutrient fertilizers 27.9% compared with 26.61% for the previous year.



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Funds Needed for Washington State Agronomy Farm

YAKIMA, WASH. — Development of Washington State College's recently acquired agronomy farm has started and construction of a new seed house has begun but $83,000 is needed to equip the research farm and seed processing and storage plant.

A progress report and outline of needs for additional funds was made here by Dr. B. R. Bertramson, chairman of, Washington State College agronomy department, at the annual meeting of the Washington State Crop Improvement Assn.

Dr. Bertramson outlined six projects already underway on the 220-acre agronomy farm, recently bought by the college at $93,240 set by a board of arbitration.

About $140,000 is committed. This will be about enough, Dr. Bertramson reported to pay for the farm land and complete the six development projects already started. He estimated it would cost an additional $37,000 to buy necessary equipment to operate the farm including foundation seed fields and experimental nurseries. Dr. Bertramson said it would be possible to rent the equipment at the annual rate of 10% of its value but that the necessary money for this was not in sight.

Funds to buy the farm and develop it this far have come partly from college sources and partly from contributions by wheatgrowers and others in a grower-sponsored campaign last year.

As to the seedhouse, Dr. Bertramson said that about 80% of the originally planned building is being built from funds appropriated by the 1955 legislature. Machinery to operate the house is estimated at $46,000.

Concerning the needed $83,000, the agronomy chairman pointed out that even if the state legislature should be disposed to appropriate funds toward that end it would be at least a year and a half before they would be available. "A more immediate solution is badly needed," he said.

California Considering Nematode Quarantine

SACRAMENTO — The California Department of Agriculture has taken under submission evidence and testimony offered at a public hearing on a proposed exterior quarantine which would restrict admission to California of soil, plants with roots and underground portions of plants which may be infested with burrowing nematode.

The proposed quarantine would require certification to the effect that soil was found pest free and that plants were grown in a manner precluding infestation, before they could be allowed to enter California. Bulbs without roots and smooth root vegetables, such as carrots, potatoes, turnips and beets, would be exempt from the certification requirements.

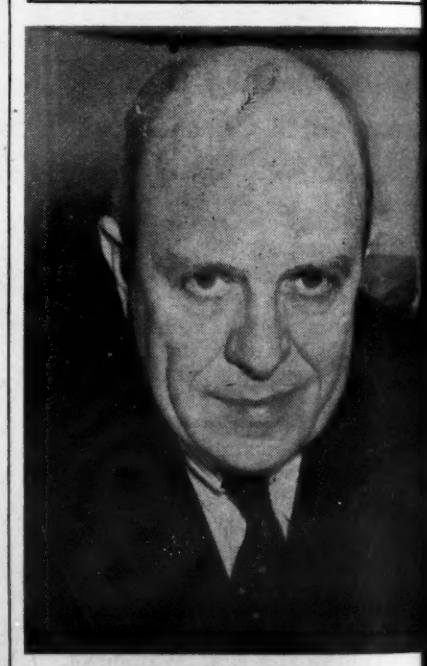
Chemical, Breeding Research on Sugar Urged by Committee

WASHINGTON—An expanded research program to develop superior varieties of sugarcane and sugar beets with greater resistance to disease, cold, insects and nematodes and more suitable for mechanized operations, is recommended by the U.S. Department of Agriculture's Sugar Research and Marketing Advisory Committee, which met in New Orleans recently.

In the field of production, the committee recommended expanded research on weed control, including development and evaluation of new and existing herbicides for control of annual and perennial weeds in sugarbeets and sugarcane, and fundamental studies on weed-sugarbeet soil relationships in preplanting, preemergence and post-emergence treatments.

Arizona Chemical Plans New Tall Oil Unit

NEW YORK—Engineering studies for a new tall oil fractioning unit at Springfield, La., have been authorized at a meeting of the Arizona Chemical Co., Richard E. Sumner, president has announced. This company, which is jointly owned by American Cyanamid Co. and International Paper Co. is a producer of tall oil products and tall oil rosins that are used by paint and varnish producers, and in the soap, surface coating, chemical and paper industries.



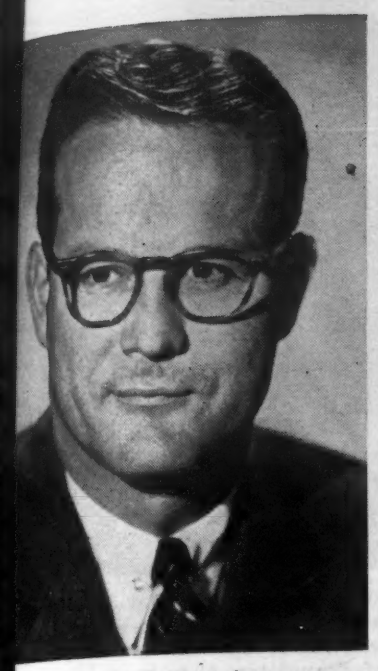
John O. J. Shellenberger

John O. J. Shellenberger Named Director of Marketing for ACP

AMBLER, PA.—John O. J. Shellenberger, vice president, has been appointed director of marketing of the American Chemical Paint Co., Ambler, Pa. The appointment was announced by Leon Cherksey, president.

In his new capacity, Mr. Shellenberger will supervise sales and marketing activities of the Ambler firm's three main divisions: metalworking chemicals, agricultural chemicals and the international division. He carries into this new position a background of 20 years' experience in metalworking and agricultural chemicals, both at home and abroad.

Mr. Shellenberger joined ACP in 1935 as advertising manager. During World War II on a leave of absence, he served a tour of duty with the navy, attaining the rank of lieutenant commander. Upon his return to the company in 1946, he became manager and later vice president and director of the international division.



W. J. F. Francis

W. J. F. Francis Named Vice President of American Potash

LOS ANGELES — Appointment of J. F. Francis as vice president in arge of sales for American Potash Chemical Corp., was announced re- tly by Peter Colefax, president, company headquarters in Los geles.

Mr. Francis has been general sales nager, western, of the company ce December, 1952, after coming the organization from Pennsyl- ia Salt Manufacturing Co., Ta- a, Wash., and previous experience h California Spray-Chemical Corp., hmond, Cal. He has served in the t on various agricultural chem- ls OPS-NPA industry advisory mittees in Washington, D.C. Mr. ancis will continue to make his ces at Los Angeles.

He is a graduate of the University California, class of 1936, where he eived a bachelor of science degree, a year later his master's degree entomology.

Ed M. Kolb will continue in charge eastern activities as general sales nager, eastern, and William Clines been promoted to western sales nager from his previous position sales manager, western. heavy micals.

per Production, ipments Show ain in October

WASHINGTON — U.S. production superphosphate for October ounted to 214,898 short tons 0% A.P.A.), according to the Bu- u of the Census, Department Commerce. This figure represents increase of 18% from the revised tember 1955 output and is 16% re than the figure reported for corresponding month of 1954.

hipments of all grades of super- sphate totaled 127,376 tons for ober or an increase of 10% from previous month's volume and are more than the figure reported for ober 1954. Stocks on hand at the of October were 15% more than e held on Oct. 31, 1954 and 6% ter than the quantities on hand f Sept. 30, 1955. These monthly res (including percentage nges) are unadjusted for seasonal ation and number of working s.

ads Foundation

LEXANDRIA, VA. — Ralph H. e, president of R. H. Bogle & Co., ultural chemical manufacturing has been named to head the ndria Area Industrial Founda- The Foundation, according to ertificate of incorporation, has ts purpose the industrial and ercial development of the city northern Virginia.

Dow Executives Foresee New Round of Industrial Expansion

MIDLAND, MICH.—A whole new round of industrial expansion may be started in 1956. At least that is the view expressed by management of the Dow Chemical Co. in taking its annual year-end look at the past and future.

Dow executives point out that, beginning in 1950, American industry built capacity with the objective of supplying both "guns and butter." It turned out that most of the production went for peaceful purposes, and those peaceful purposes are now absorbing just about all industry can produce, says Dow.

Steel, chemicals, synthetic rubber, aluminum and glass were cited as examples of basic industries that have "just about used up their capacities" and must look to major expansion. The Dow people think this will be felt some in 1956 but even more in 1957 because of the inherent lag between planning and construction.

The coming year will be an even better year for business than was 1955, according to the Dow executives. But they add that it may follow a somewhat different pattern. They note that 1955 started slow and the economy gained speed as the year progressed.

Indications are that 1956 will get off to a vigorous start but, Dow thinks, could decelerate before year end. They do not foresee a downturn in the economic curve but rather the possibility of some flattening.

Dow itself spent about $50 million for construction in 1955 and expects to spend at least $75 million in 1956.

ALABAMA FARMS

AUBURN, ALA.—There are 211,512 farms in Alabama—59% of them occupied by owners, 41% by tenants.

Paul M. Koger Named Head of Agricultural Conservation Service

WASHINGTON—Regional director for the Southeast of the Agricultural Conservation Program Service, Paul M. Koger of Tennessee has been named administrator of the ACP Service, Ezra Taft Benson, secretary of agriculture, announced last week.

Mr. Koger was born in Pickett County, Tennessee, and graduated from the Tennessee Polytechnic Institute with a degree in agriculture. His previous experience in government and business activities consisted of posts as county agricultural extension agent; as a farmers home administration county supervisor and as a soil conservationist with a farm implement manufacturing company.

Mr. Koger succeeds Fred G. Ritchie who has been acting administrator and who will continue as deputy administrator of the ACP service.

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Alfalfa Aphid Control Can Be 99% Effective, Reasonable in Cost, California Forum Told

BAKERSFIELD, CAL. — California's $125,000,000 alfalfa hay industry faces another gloomy season because of spotted alfalfa aphid infestation, but growers don't show any indications of throwing in the towel.

This observation was made by Dr. Ray Smith, University of California entomologist, speaking at the Central California Agricultural Forum in Bakersfield, Cal., recently.

He said May through September would be critical months, estimating that $6,000,000 would be spent in control work during the coming season.

Asked if the aphid problem might cause sharp reductions in alfalfa planting, Dr. Smith said definitely not.

"It's a basic crop," he told the 250 growers, farm machinery and supply dealers, and others in allied fields, "and it fits into the rotation program. It's also necessary to the dairy and cattle business."

He said the general feeling is that alfalfa can be produced despite the aphid if "growers use proper and timely control measures."

He expressed doubts that growers could come out ahead financially, however, if more than $15 an acre was spent during the season for aphid control.

Dr. Smith and a fellow entomologist, J. E. Swift, said without control measures the aphid could destroy half the state's crop. "But of course there will be control, and it can be 99% effective as well as reasonable in cost."

The spotted alfalfa aphid, formerly called the yellow clover aphid, has marched northward through California with devastating suddenness. First found in New Mexico in 1954 —originally from India, some authorities think —the aphid spread through southern California that summer. By summer 1955 the aphid menaced San Joaquin Valley, particularly Kern County, the No. 1 certified alfalfa seed producing district in the nation.

Proceeding steadily up the San Joaquin Valley and then leaping north to Red Bluff, aphid armies swarmed over most of the Central Valley before winter cold and rain slowed their progress, while flanking groups infiltrated into central California coastal counties.

As a result, every major alfalfa county is now under attack by the tiny pest.

What about control measures?

Malathion and parathion are best, the forum assembly was told. Malathion sprayed by air costs about $3.40 an acre. Parathion costs from $1 an acre by ground to $2.70 by air. Dusts are not advisable because of drift to neighboring fields where cows and other animals may be pastured, the forum was told.

Production costs will, of course, be hiked by these chemical preventive measures. On an average San Joaquin Valley ranch the costs of producing alfalfa hay without the aphid present have been calculated at about $18 a ton on a 7-ton annual yield.

It has been estimated the addition of $5 an acre annually for aphid control will increase this to only $18.71, while the addition of $10 per acre will increase it to $19.43.

Community effort is vital, the entomologists warn. If Jones does a good spray job on his ranch and Smith, his neighbor, neglects his field or big patches along his fence, aphids will ramble back in very shortly.

The growers were told that eventually natural enemies may stop the aphid. Ladybird beetles naturally present in fields sometimes give good control, but there is no evidence that the release of ladybird beetles brought down from the mountains is effective.

Meanwhile a fungus found near San Diego, Cal., last summer offers some hope as a biological weapon, particularly under humid conditions. This fungus virtually wiped out spotted alfalfa aphids in some fields there.

Another method of attack is to find alfalfa varieties that resist the aphid. Lahontan is one of these. Spotted aphids simply do not reproduce on Lahontan, for reasons yet unexplained.

Besides killing the lower leaves of alfalfa plants, the aphid covers plants with honeydew in which a black fungus grows. Results of a 30-day feeding test in Kern County indicated that light damage does not always destroy the feed value of hay. The test indicated that steers fed severely-damaged hay gained only 0.7 lb. per day compared to 1.9 to 2.2 lb. per day for those fed undamaged or slightly-damaged hay.

Nevertheless, the plant destruction cannot be ignored. In parts of San Joaquin Valley untreated alfalfa fields have lost more than 60% of their yields.

Alfalfa growers plan to "live with it." Imperial Valley will have its normal acreage; Palo Verde, down last year, will return to normal. Total production of the state this year, in spite of aphids, will probably be higher than in 1954 if control measures are carried out.

The forum, called several times each year when problems begin stack up against growers, is alternated between Bakersfield and Fres The forum was established four ye ago and is open to all farmers a those linked with the industry.

Earlier in the forum, Roy Barn Kern County farm adviser, who h devoted the past six years to search for possible major crops replace cotton acreage, placed e phasis on field corn, alfalfa seed a black-eyed beans.

Mr. Barnes reported on calli on growers who have had outstan ing success in fitting new crops a cotton rotation plan. One Baker field grower, emphasizing the im portance of proper fertilizing an timely watering, got yields upwar of five tons, with an over-all ave age of 3¾ tons. By storing h shelled corn on his farm, rath than marketing it at harvest at $46 offering, he received $60.

Discovering he was losing too mu of his crop with the "snapping ro type picker, he adapted his comb to harvest the corn with a mi mum of loss.

James Hughes, a Turlock seed pro essor, pointed out how black-ey beans fit into a rotation plan in t San Joaquin Valley. Emphasis is a being placed on castor beans, s beans and sesame as tested rotati crops.

The forum, swinging from crop s lection to the use of pesticides, c tered discussion around ramificatio of the Miller Amendment, a l which established tolerances on pes cides.

Allen B. Lemmon, chief of the C fornia Bureau of Chemistry, advis all growers to follow directions pesticide labels to avoid misuse. said failure to follow these directio "could result in penalties far exce ing the trouble necessary to do t job correctly."

Mr. Lemmon said the state's cr inspection staff inspected betwe 20,000 and 25,000 samples in th '30s to check for pesticide residue Last year, only 3,600 samples wer analyzed. The tremendous redu tion is due to several things—mo effective pesticides used and know edge of application.

J. T. Vedder of Bakersfield is for president this year, and conduct the local meeting.

Other key speakers during the d long session included Dr. L. C. Gl ver, Shell Chemical Corp., speaki on industry's responsibility in follo ing the line on pesticide regulati W. A. Harvey, extension service s specialist, University of Californ and Delvan W. Dean, U.S. Depa ment of Agriculture, pesticide regu tions section.

FORUM SPEAKERS—J. T. Vedder, standing, left, president of the Cent California Agricultural Forum, is shown above with speakers at the rec forum held in Bakersfield, Cal. With Mr. Vedder, standing, are Allen B. Le mon, chief of the California Bureau of Chemistry, and Dr. Ray F. Smi University of California entomologist. Seated, left to right, are L. C. Glov Shell Chemical Corp., San Francisco; J. E. Swift, University of Californ entomologist, and W. A. Harvey, University of California weed specialist.

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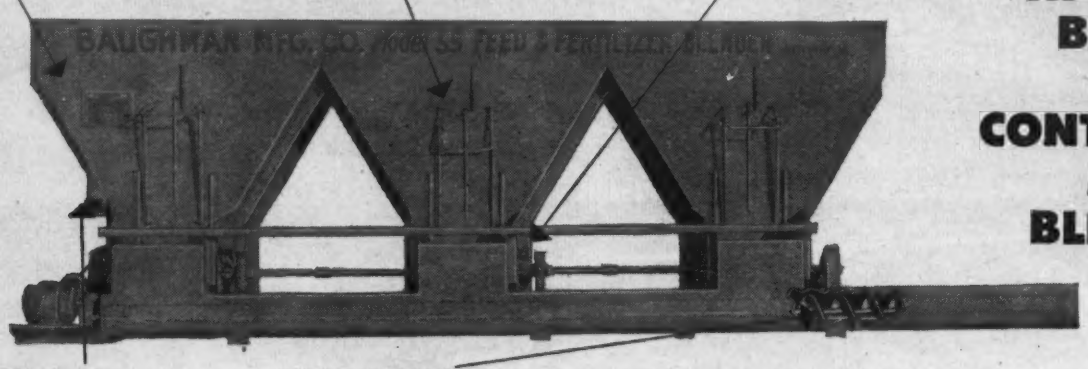

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California Commissioners Hear Reports On Miller Law, Spotted Alfalfa Aphid

SACRAMENTO—Farmers must be careful to use pesticides on food crops exactly according to directions or they may run into difficulties, Allen E. Lemmon, chief of the California Department of Agriculture's Bureau of Chemistry, told agricultural commissioners at their annual meeting in Sacramento.

Federal tolerances established by the Miller Act to limit the amount of pesticide residues permitted on fruits and vegetables should cause no difficulties in marketing California's crops, if farmers carefully use pesticides according to directions for use printed on the label or specified by official spray schedules, he said.

Mr. Lemmon was one of several state officials who spoke to the group on a variety of subjects. Robert W. Harper, assistant chief of the state bureau of entomology, discussed the present status of the walnut husk fly, the pear psylla and the spotted alfalfa aphid. Charles V. Dick, chief of the division of plant industry, gave a resumé of the khapra beetle situation and H. W. Poulsen, chief, bureau of fruit and vegetable standardization, read a paper on "Planning for Poultry Meat Law Enforcement."

The commissioners were told by Mr. Lemmon that California is the only state with its own spray residue control law. It has been in effect for more than 20 years, assuring producers and consumers alike that fruits and vegetables marketed in California or shipped from California contain no detrimental pesticide residues.

The California Department of Agriculture regularly analyzes about 300 samples each month of fruits and vegetables offered for sale or shipment from California to make certain they meet requirements. Approximately 3% of the samples are found to contain amounts of residue in excess of tolerances and in these cases, Mr. Lemmon explained, inspectors investigate the circumstances and interview growers to uncover the error made in use of chemicals which led to the violation.

Continued education, and prosecution where this appears necessary, has helped California farmers to achieve and maintain an excellent record for their produce, he said.

Mr. Harper told the commissioners that the development of organic phosphate sprays has reduced the threat of pear psylla.

"The addition of malathion or parathion to the regular DDT codling moth cover sprays has resulted in excellent control," he said. His estimate of the spotted alfalfa aphid was less optimistic. In a little more than a year and a half, the species has spread over nearly the entire state, causing loss estimated at $13,000,000 to a $100,000,000 crop.

"In addition to killing stands, reduction in yield, lowering of quality, interfering with harvest and baling operations, and the potential effect on bee populations due to treatments, a number of other factors are involved as a result of aphid attack," he said.

"The palatability of hay for feeding is one consideration. The effects of damage on the feeding value of hay are another, for chemical analyses show that protein content of severely damaged hay may be reduced by more than 5% while pigment reduction may exceed 40%.

Mr. Harper described the appearance of the walnut husk fly for the first time in northern California and the difficulties encountered in employing soil toxicants to hold down infestation while determining limits of distribution.

In December the department had completed treatment of 95 properties out of 220 known to be infested with khapra beetle in California, according to Mr. Dick. This represented about 43% of the infested properties by number and about 76% of the cubic footage involved. Since inception of the khapra beetle survey program 22,050 properties have been inspected at least once, he added.

Money, Materials Given To California School

BERKELEY, CAL.—The University of California received two cash donations and about half a dozen gifts of chemicals during September in order to continue various studies in the field of weed and insect control in cropfields.

The California Planting Cotton Seed Distributors gave $3,162.51 to the educational institution to be used in the study of weed control research in cotton fields, on the Davis campus of the College of Agriculutre. The same campus was also the recipient of another $771.00 given by the California Cooperative Rice Research Foundations, Inc., which earmarked the money for a rice insect research program.

Four gifts went to the Berkeley campus by the following manufacturers of agricultural chemicals: Chemagro Corp., two gallons of systox for melon insect investigations; Larvacide Products, 100 lb. of larvacide for research on sweet potato diseaes; Rohma and Haas Co., 36 lb. of miticide FW 293 for walnut insect investigation; and the Velsicol Corp., 200 lb. of 2% endrin dust for melon insect investigation.

Two statewide gifts were made by the American Chemical Paint Co. for experimental work on control of weeds and brush on rangeland; and by Geigy Agricultural Chemicals for spray on apricot trees to correct nutritional deficiencies.

SEEDMEN TO MEET

COLLEGE STATION, TEXAS — The seed supply for Texas farmers will be the subject of three days of discussion at Texas A&M College in January. Beginning Jan. 11, members of the Texas Certified Seed Breeders Assn. will meet on the campus. Formal meeting of the association will be January 12-13, but smaller groups will hold meetings and discussions Wednesday.

HORTICULTURAL MEETING

GENEVA, N.Y.—A few of the ways which Cornell University scientists are approaching problems of New York state fruit growers will be featured in the observance of the "Second Century of Horticulture" in Rochester Jan. 17-20. The occasion will mark the first century of the New York State Horticultural Society with a look ahead to the next century.

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WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Exported Fertilizers

The export trade forms an important segment of the fertilizer business. All the major producing countries have a stake in the market and competition is growing yearly. Peasant farmers everywhere are being shown that modern methods pay dividends in increased crops. Because of this the market is an expanding one.

Will the market for the chief producers in the U.S., Canada and in Europe continue to expand? Experienced trade observers believe that soon saturation point will be reached and it will eventually contract. The reason is that many importing countries are anxious to build up their own domestic production in order to save the expenditure of scarce foreign currency.

Turkey is a case in point. The consumption of chemical fertilizers has risen from 45,000 tons in 1951 to a current offtake of 600,000 tons. This boost in usage is a direct result of a government sponsored program to increase agricultural production, not only for domestic use—for a long time it was barely above subsistence level—but also to break into the export market. Most of this fertilizer has had to be imported.

Now Turks are getting ambitious. Projects have been evolved for the construction of a local fertilizer industry and the import trade will suffer in consequence. A nitrogen plant is in course of erection at Kutahya. Completion is expected in the summer of 1958. The capacity will be in the region of 110,000 tons of chemical fertilizers a year but already plans are being made to double that.

A superphosphate plant with a capacity of 110,000 tons has been constructed at Iskenderun, on the eastern Mediterranean coast. New installations are being built at the Murgal undertaking of Etibank to produce sulfuric acid.

Taiwan, Too

In 1954, Taiwan imported 359,368 tons of fertilizer, including 290,877 tons of ammonium sulfate. All the fertilizer factories are government-owned and the word has gone out that the dependence on imports must be cutback. The authorities have been working on it since 1953.

One plan will see the capacity of the Kaohsiung Ammonium Sulfate Works expanded to 60,000 tons a year. Surplus secondary power on the eastern front will be used to produce ammonium nitrate by the electrolytic process and this will be converted to nitro chalk, with an annual offtake of about 70,000 tons. Production is expected to start in the summer of 1956. Another plan calls for the construction of a urea plant to produce 85,800 tons a year, nitrogen content 44-46%. The rice and sugar crops require 85,000 tons of nitrogen a year alone. This plant may be ready in the spring of 1958. Meanwhile, power shortages are interfering seriously with the operations of a calcium cyanamide plant capable of producing 30,000 tons a year.

According to the U.S. Department of Commerce, the production of chemical fertilizers increased 2.4% to 167,961 metric tons in 1954. The yearly capacity of the three government-owned enterprises producing fertilizers is 78,500 tons of calcium cyanamide; 79,000 tons of superphosphate, and 7,200 tons of ammonium sulfate.

Sulfur production increased from 3,478 tons in 1953 to 5,967 tons in 1954. The commerce department comments that the industry faces difficulties unless processing and refining techniques can be improved to permit a higher rate of recovery or new markets for low-quality sulfur found. There are 11 sulfur mines, one government owned. The production of pyrites declined slightly to 24,240 tons in 1954 from 25,291 tons in 1953.

Chilean Nitrate

Trade sources in London say that the agreement signed between the government of Chile and the Chilean nitrate producers earlier last year is still under discussion in parliament. However, there is every likelihood that the agreement will be ratified in the near future. Some improvements in exchange rates have already been granted. The rate at which nitrate drafts can be sold is now 300 pesos to the dollar and it is hoped that when the agreement is finally implemented the rate will jump to 400. This compares with the present free rate of exchange of 700 pesos.

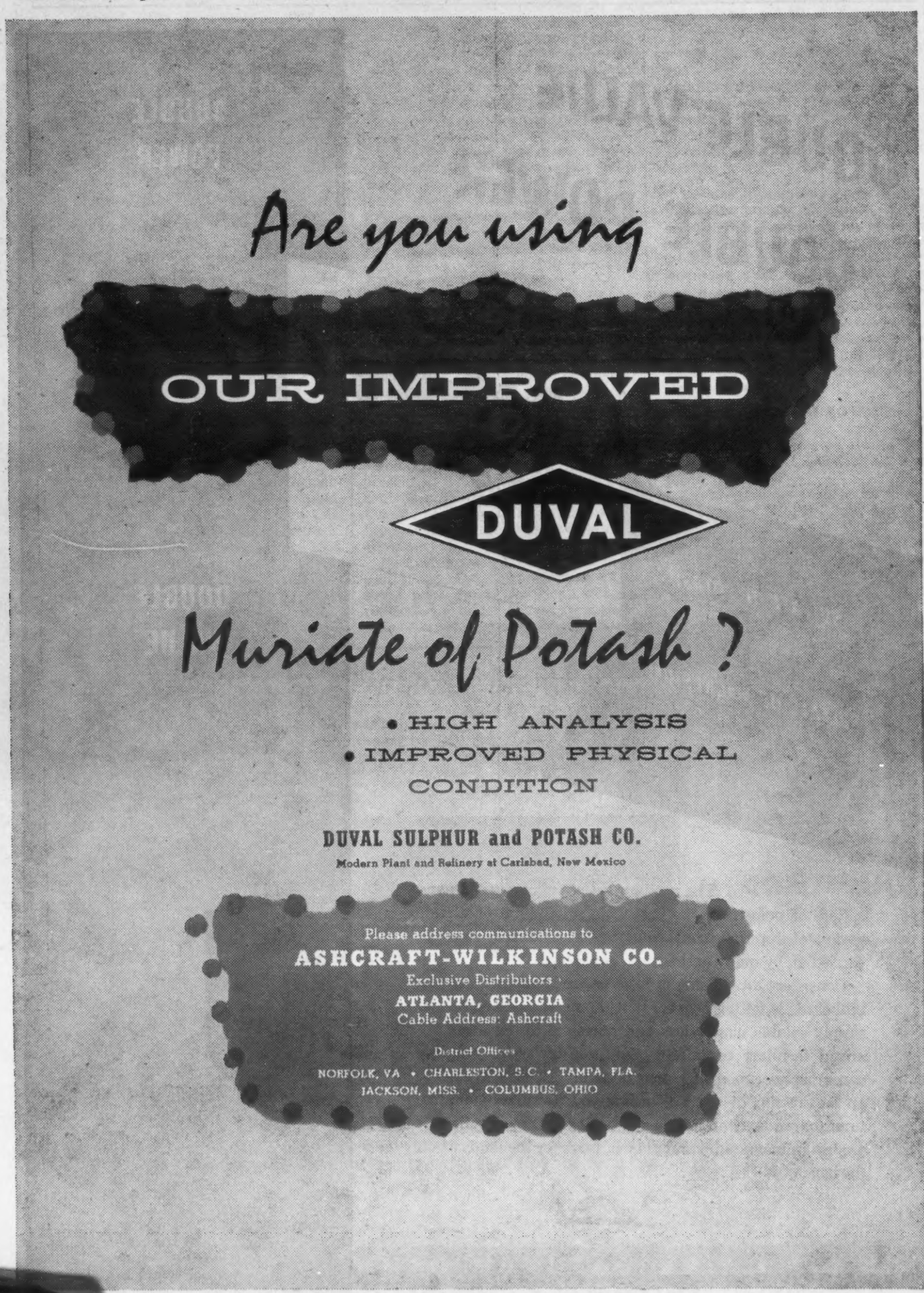
Water War

The U.S. and Canadian governments are waging a joint war. Their enemies are sea lampreys which prey on fish and since they moved into the Great Lakes some years ago they have taken a severe toll of commercial fishing. They have practically eliminated lake trout in Lake Michigan.

Now the agricultural chemical industry has been brought into the operation. A new poison which it is claimed will kill lampreys without injuring other fish has passed laboratory tests and is now undergoing extensive trials on a larger scale. The poison is expected to kill the five generations of lamprey larvae which live on the mud bottoms of streams feeding into the Great Lakes.

The new poison will be used in conjunction with electrical barriers which have been erected by the U.S. and Canadian governments across the tributaries of the streams. These halt the movement of adult lampreys trying to reach the spawning grounds. The U.S. has blocked off its spawning areas already and Canada will complete its part of the program by 1957.

It is hoped that the new poison, in conjunction with the electrical barriers, will destroy what has been described as the "vicious raider of the sea" completely.



Special Retail Section

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U.S. Farm Census Reports on Fertilizer Use

Details of commercial fertilizer and lime use are included in the preliminary state and county reports of the 1954 Census of Agriculture, released recently by the Bureau of the Census, U.S. Department of Commerce.

In the table below are the figures on fertilizer and lime consumption, including use on specific crops, for the states in Croplife's South dealer area, to which the special regional circulation of this issue goes.

Similar charts for states in other regions will follow in subsequent issues of Croplife, and the statistics for all of the states will be available in reprint form from this publication. Data for Midwest states will be published next week.

The Bureau of the Census points out that the figures in the preliminary reports are subject to revision. The production statistics are for the calendar year of 1954.

Similar statistical data from the 1954 census of agriculture is available for each of the 3,100 counties in the U.S. in the form of individual four-page leaflets. These county reports, along with the state reports, may be obtained from the Director, Bureau of the Census, Washington 25, D.C.

A charge of 10¢ is made for a single preliminary report, state or county. Charges for each of the complete state sets vary, depending upon the number of counties involved. A charge of $41 will be made for one complete U.S. set, including all counties and all states. A set of the 48 state reports may be obtained for $3.75. Payment should be included in the order.

In addition to the data on fertilizer and lime use, the preliminary reports include statistics on number of farms, farm characteristics, acreage in farms, value of land and buildings, uses of land, farm facilities and equipment, specified classes of livestock, specified crops harvested, and available comparative data from the 1950 census of agriculture.

	Alabama	Arkansas	Florida	Georgia	Kentucky	Louisiana	Mississippi	No. Carolina	So. Carolina	Tennessee	Texas	Virginia
COMMERCIAL FERTILIZER												
Dollars	40,422,303	22,128,535	51,439,176	55,209,320	27,920,047	18,676,342	40,897,600	70,008,660	36,580,468	27,029,330	30,649,020	29,404,485
Tons	964,390	348,296	1,058,493	1,252,348	564,076	293,528	712,337	1,409,143	788,815	534,310	487,059	646,046
Acres fertilized	4,802,247	2,953,042	2,322,212	6,296,053	2,791,183	2,490,590	4,461,642	4,920,454	3,303,570	3,238,465	4,548,570	2,371,801
LIME & LIMING MATERIALS												
Tons	204,291	116,038	364,221	280,509	1,084,410	87,897	186,118	299,806	124,485	232,491	43,314	452,752
Dollars	1,167,937	469,890	2,887,579	1,669,301	3,102,359	488,715	1,009,628	1,958,915	682,734	794,520	232,038	2,107,032
Acres limed	229,026	77,937	461,768	364,890	593,759	92,030	217,175	320,847	143,070	144,125	48,164	332,017
CROP USE OF FERTILIZER												
Hay and cropland, pastured ....tons	114,695	28,995	42,158	122,237	89,674	31,343	56,298	100,225	75,979	101,488	86,425	125,051
acres	578,181	248,800	220,154	695,446	554,532	229,965	402,391	517,881	424,014	664,833	829,615	514,473
Other pastures ....tons	65,869	7,351	95,825	89,538	19,564	13,853	29,706	43,638	26,377	24,398	31,613	51,374
acres	355,276	79,413	580,176	555,386	132,603	119,244	228,603	220,412	159,353	159,944	311,862	222,674
Corn .....tons	338,900	41,915	60,592	425,213	213,472	50,082	203,795	457,926	204,745	168,871	57,167	190,129
acres	2,155,781	365,068	373,666	2,712,777	1,550,674	429,998	1,386,227	1,977,374	1,028,899	1,323,900	519,871	783,369
Tobacco .....tons					192,483			427,521		58,876		75,725
acres					271,127			655,455		96,948		120,496
Cotton .....tons	302,189	198,836	10,559	280,018		87,255	342,794		241,527		108,387	
acres	1,135,797	1,553,948	34,146	993,121		652,232	1,929,180		806,167		996,468	
Fruits, vegetables, potatoes, etc. ...tons	48,379	11,054	769,211	83,677	7,857	25,713	32,602	76,447	53,782	18,972	56,001	73,620
acres	122,983	58,735	902,657	251,382	21,758	120,585	118,205	171,462	131,335	55,551	322,403	158,850
Other crops .....tons	88,925	59,204	77,940	246,649	38,433	84,307	40,622	294,728	183,445	158,437	145,681	126,851
acres	440,035	641,809	212,105	1,033,671	257,397	938,761	378,816	1,336,180	723,951	931,979	1,563,243	572,034

TEXAS DEALER SAYS

Helping Farmers With Soil Testing Helps Sell Fertilizer

By RUEL McDANIEL
Croplife Special Writer

Cuero Feed Store, Cuero, Texas, sells about a steady volume of fertilizer practically throughout the year in an area not strongly "sold" on the use of fertilizers; and the concern does it largely by taking the time and trouble to sell farmers on the fundamentals of fertilizers in general, not merely specific brands or individual sales.

"We must sell prospects on fertilizers in general before we can sell them on ours," points out Reuben Heneke, manager. "Once we have sold a man on the intrinsic value of fertilizers in general, then there is plenty of time to sell him on using ours."

The store is owned by Gus T. Cage and Fred L. Hansen, former high school agriculture teachers and now turkey growers.

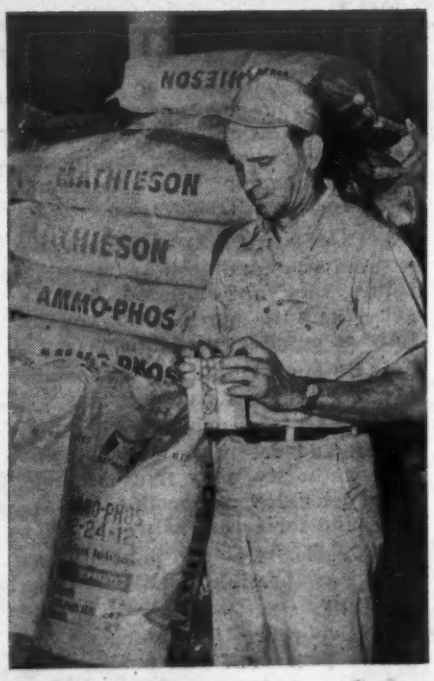
"We feature high analysis fertilizers," Mr. Heneke says, "for several reasons. First, we believe the customer gets more for his money; second, high analysis brands produce the same or better results from half the bulk, meaning that the farmer must haul less tonnage and handle less throughout the operation. He needs less storage space and so do we—to get the same or better results."

In the absence of general fertilizer use in the area, the concern has established a profitable fertilizer business by seeking out specialized farms and concentrating first on them to sell the fertilizer idea.

Dairy farmers are excellent customers of the store now, since the management has concentrated on dairymen and convinced them that their fields and pastures will produce more feed for the money and time invested by use of high analysis fertilizers.

Most dairymen grow sudan grass and oats, and demonstrations on several farms by the company have convinced dairymen that it pays to fertilize these two dairy crops. The

(Continued on page 13)



TEXAS DEALER — Reuben Heneke, manager of Cuero Feed Store, Cuero, Texas, is shown above preparing to send in a soil sample for testing.

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Extensive use of local newspaper advertising and direct mail is credited by James H. Andrew of the Andrew Farm Store, Jefferson, Iowa, as being most valuable in informing the public about agricultural ammonia.

The public, Mr. Andrew says, constitutes not only the farmer, but also city land owners, bankers, extension personnel, implement dealers and everyone else connected with agriculture.

Mr. Andrew, who makes regular use of local newspaper advertising, supplements it with direct mail advertising to cover his trade territory thoroughly. For the past three years he has featured a continuous series of weekly ads which have been highlighted with a photo and a testimonial statement from one of his customers. These ads feature each of his products just prior to the period when that particular product will be needed.

Mr. Andrew outlined his advertising program at the recent meeting of the Agricultural Ammonia Institute at Kansas City. He said:

"The fact that these ads are a weekly feature provides the continuous hammer, hammer, hammer which you need to get your foot in the customer's door. We have felt that using photos of people who are well known and respected in our community has been the greatest motivation to make this program a success.

"By featuring a different farmer each week I believe that an air of curiosity is established on the part of the reader in which he looks for your ad to see just who is being featured and what is said about them. In a way, this is news and everyone is interested in news about persons whom they know. Also, the person who is featured generally feels flattered that you have selected him and that his success is known to others.

"However, in advertising a change of pace is needed from time to time, and this we attempt by introducing new innovations as they are needed.

"Last fall, after over two years of testimonial ads featuring farmers, I felt that our readers might be getting a little drowsy so we gave them a big surprise by featuring some 10 or 12 ads in which the 'cheesecake' approach was used. I felt that this was rather startling to our readers.

"One thing that added interest to these ads was the fact that pictures of the attractive girls featured were secured from outside our local community and were not known to our readers. This led to many questions of 'Who was that girl in last week's

(Continued on page 10)

When Pat McGillicuddy got to work that morning about nine o'clock, after having visited with the county agent concerning new farmers in the area, Oscar Schoenfeld, his rotund, balding, penny pinching partner had already shoved two hours of routine office work across his b u s y desk. Oscar had even picked up all the loose paper clips from the wastebasket, tossed them into the fierce bulldog plastic bowl and also retrieved about 15 rubber bands which now rested in a special little box on Oscar's desk, close to the row of six freshly sharpened pencils.

Oscar muttered gruffly in answer to Pat's cheery "Good Morning," for in his soul and mind burned a scathing contempt for a partner who didn't get to work on time. Outside calls meant nothing to Oscar. It was being on time at the office that counted; doing the routine tasks right on the dot and never varying a second unless necessary. That was the way a fellow got lots of work done in a day. That was the way a fellow accomplished something with his time. Laughing and joking with customers and salesmen—bah! Those who did it would find out some day.

Now Oscar waited until Pat had sat down at the desk for a few moments, before he said anything. Millie, the plump, nervous bookkeeper sensed that a quarrel was in the offing. She saw Oscar's beetled brows, his tight lips, and so she reached for an ulcer powder and hoped it would work on her stomach before the fighting began.

"I've been looking over the books," Oscar began, "and since this is the Christmas season and farmers will be spending most of their money on silly stuff for their families, we had better lay low on buying anything else from supply houses the rest of the month.

"If we go out and try to sell anything, the farmers will want to charge it, and that won't help us. If we wait until after Jan. 1 to do our buying, we'll get better prices from suppliers. They'll be hungry for business. They always are—in January."

Pat's blue eyes looked steadily at Oscar's sour face. "You've got it all figured out, haven't you?"

"Well," challenged Oscar, "it's the truth, isn't it?" He figured Pat had no answer for that.

"No, it isn't," Pat said, suddenly argumentative. "People are happy at Christmas time, and in the spending mood. That's when a fertilizer dealer should try to sell everything the farmer needs. If he's a good customer, with a good credit rating we can handle that part of it."

"And we should wait for our money?" Oscah thundered.

"Well, why not?" asked Pat angrily. 'I'd rather be waitin' for something that's going to be paid for, than wait for nothing to be paid for, wouldn't you? After January, Oscar, the farmers begin to think about their annual taxes and things like that, and that is a poor time to try to sell them. You can do it, of course, but it's a harder proposition. Why not sell them the last two w e e k s in December, when they are in the mood to buy, instead of just sitting here and twiddling our thumbs?"

"We don't twiddle our thumbs when we are alone in this office," Oscar snapped. "We work many hours a day, from 7 to 5, not from 9 to 5, let me tell you."

"If you mean I work only from 9 to 5, you'd better change that from 9 until 11 some nights," Pat corrected him. "I put in just as many hours as you do, maybe more."

"And spend twice as much as I do," snapped Oscar. "I still think we should buy nothing the rest of the month, sell only to farmers who come in and ask for stuff—then they'll have to pay cash. We can also get a chance to clear the shelves of slow moving stock, and start the year right."

"You never start a new year when you are selling to customers," Pat insisted. "You've got to keep selling to them all the time. You can't let up for a minute. If you do, somebody else will step in and get the business."

Tillie could stand it no longer, so she got up and went to the washroom, but as she did she heard Pat say, "Where would this business be if I didn't go out and sell most of the time?"

And Oscar came back with, "And where would this business be if I didn't keep cutting expenses and making you go out and collect bad accounts?"

"Well, I guess there is something to be said for both of us," Pat concluded.

"There is more than something to be said for the way I do things," Oscar insisted. "I have got common sense. I am practical. Even the banker says so."

"And I suppose I haven't got any common sense, eh?" asked Pat, his lean face an angry red.

"That is for you to decide," Oscar said quite coldly. "Ask yourself if it is good policy to go out and try to sell new b u s i n e s s, when you've got a delinquent account list on your desk—for five days, yes—and it's about a foot long, and you do nothing about it."

Pat swallowed hand. "I was planning to do something about it today," he said. "The county agent gave me the names of four new farmers in the area. I am going out today to see them and try to get their fertilizer business, and I will take that delinquent list along and try to collect. That's why it took me so long to get here this morning. I was working for us—seeing the county agent about the new farmers."

A look on Oscar's face indicated plainly enough that he did not regard this activity of Pat's as work—so long as delinquent accounts remained to be collected.

At this point Millie came forward n e r v o u s l y. She held two small Christmas packages in her hands. They were decorated with colorful ribbons.

"It's—it's a little early to give Christmas presents," she interrupted, "but I bought them two weeks ago, and you might as well have them now. Shaving lotion. Lilac for you, Pat, and bay rum for you, Oscar. I know, I asked your wives."

Each man took his gift and stood abashed, not knowing what to say. "Thanks, Tillie," smiled Pat. "I guess you're right. We should put off our quarrels until after Christmas. I'm sorry, Oscar." And Pat held out his hand.

Oscar squirmed uncomfortably. He looked this way and that, his lips tight. Then finally he lifted his hand weakly and gave it to Pat, not looking at his partner. Pat's shake was vigorous, Oscar's strangely flabby.

OVER THE COUNTER

(Continued from page 9)

ad?' from our male readers. I was amused by the fact that one local man who had just served a two-year tour of duty with the Army overseas came into our store several weeks ago and asked who the twins were who were featured in an ad which we had run some eight or 10 months earlier. He said he thought he knew all of the twins in our county and had been worrying about who the twins were ever since he had seen the ad in a newspaper sent to him by his mother."

How to Be A Good Boss

Do you want to be a good boss?

Dr. Lloyd Morey, president of the University of Illinois, a veteran of 44 years spent in administrative work, has set forth what he considers the eight most important principles of administration. Check yourself to see how you rate. Here's the list:

1. Set up channels of communication and means of discussion, respect and use them.

2. Listen first, decide afterward. Do not be too quick or too positive with your answer; allow time for consideration, for discussion with others, even for the possibility of changing your judgment after further consideration.

3. Discuss with those affected and with advisers and proposed changes before they are initiated. Try to get others to agree with you as fully as possible in advance.

4. Be honest, fair and consistent in your dealings and decisions.

5. Delegate responsibility as fully, wisely and freely as possible, but give authority with it; then hold your delegates responsible for results and for errors as well.

6. Praise freely, publicly as much as possible, criticize only privately.

7. Give yourself as much as you can to your staff and public.

8. Do not develop or h o l d grudges, even though you are certain the other party is wrong and is treating you more unjustly.

Fertilizer Boosts Pasture Yields In Arkansas Tests

Pasture and meadow yields can be increased approximately 50% by the use of fertilizer containing phosphate and potash where these two materials are needed. And the two plant foods were needed on more than half of the western Arkansas fields included in a two-year experiment just completed by the University of Arkansas' Agricultural Experiment Station.

Other phases of the experiment revealed that when phosphorus and potassium are adequate, the pasture or meadow yield can be increased 400% or more by the proper use of nitrogen. An important factor seems to be the splitting of higher rates of nitrogen. This seemed to result in higher yields than a single application of the same rate.

Dr. R. L. Beacher, associate professor of agronomy at the experiment station, was leader of the project. It was designed to correlate soil tests with actual field results and to determine as far as possible fertilizer ratios best suited for pastures and meadows. Leslie Hileman, junior agronomist, conducted the experiments which were carried out at 13 different locations in 1955. These locations corresponded to the major soil regions of the western part of the state.

The quality of the pastures was affected by fertilization, as well as the quantity of forage. The experiments showed that protein can be increased 18 times or more by proper fertilization. Nitrogen had the greatest single effect on protein content.

Fields used for the tests were selected with the aid of county extension agents and local farmers. They were representative of the summer permanent pastures or meadows in the area. Base grasses were either bermuda or dallas. These were in association with various legumes including hop clover, lespedeza, and other native legumes.

Results of the experiments showed conclusively that yields and quality of pastures can be increased by proper use of fertilizers. Additional research is needed to determine the economic value of pasture fertilization in terms of increased beef and milk production as well as in forage yield and quality alone, the specialists say.

Delaware Soybean, Corn Kings Named

NEWARK, DEL.—Delaware's new corn king is A. C. Mackey of Bridgeville and its new soybean king is Mike Witomski of Viola.

They were named as top winners of the state's 5-acre corn yield test and 5-acre soybean yield contest at the sixth annual awards banquet of the Delaware Crop Improvement Assn. recently.

Mr. Witomski's top yield in the soybean contest this year was 62.6 bu. per acre as compared to the high of 50.8 bu. last year. Mr. Mackey reported a 126.3 bu. corn average as compared with the 145.7 bu. which won it last year.

CORN TESTS

COLLEGE STATION, TEXAS—Four hybrids led all others in the 1955 Texas Agricultural Experiment Station's corn performance tests with an average yield of 60 bu. per acre. These were Texas 26, 28, 30 and 32. All were developed and released by the station.

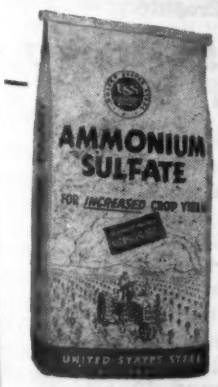
Here's a FREE folder that can mean bigger profits

use a starter fertilizer plus USS Ammonium Sulfate
CROP
AMOUNT PER ACRE USS AMMONIUM SULFATE
METHOD OF APPLICATION
WHEN TO USE
REMARKS
cotton
100 to 250 pounds
Sidedressed
Sidedress early while plants are still small.
Soil test should be made and recommended lime and starter fertilizer used for top yields.
corn
300 to 800 pounds
Broadcast and plowed down or Sidedressed at first cultivation.
Broadcast right before plowing. Sidedress early so that roots will not be cut off or plants be broken.
Plowdown is preferred on heavier soils and for heavy applications. Delayed sidedressings are often never applied. Do it early.
tobacco
flue cured
100 to 200 pounds
Sidedress
Early in the season.
Starter fertilizers should contain an equal amount of nitrogen.
burley
200 to 300 pounds
Sidedress
Early in the season.
Test soils and follow recommendations to assure top quality.
small grains
150 to 400 pounds
Topdress with grain drill or lime spreader.
Topdress between Feb. 15 and March 15.
These applications should be repeated after each grazing if small grains are used for pasture.
grass hay and pastures
(Sudan, Johnson, Sorghum, Millet, Small Grains, Rescue Grass, Ryegrass, Fescue)
400 to 800 pounds
Topdress with grain drill or lime spreader.
Topdress after harvest or grazing; apply in two applications.
A heavy application of 1-1-1 ratio starter fertilizer is a must for high yields. Don't neglect lime requirement.
grain sorghums
200 to 500 pounds
Broadcast and plowed down or sidedressed at first cultivation.
Broadcast immediately before plowing. Sidedress early to save roots.
Plowdown is best if your soil is heavy enough to hold the N. Sidedress early to save roots.
USS Ammonium Sulfate is one of the many products made by United States Steel in the South
UNITED STATES STEEL
COAL CHEMICAL DIVISION
525 William Penn Place
Pittsburgh 30, Pennsylvania
or
TENNESSEE COAL & IRON DIVISION
Fairfield, Alabama
ADV-1.428-55
Like to U.S.A.
AMMONIUM SULFATE
in the south
AMMONIUM SULFATE
bigger profits
from
USS
ammonium sulfate
NITROGEN FERTILIZER

United States Steel's new folder for Southern farmers offers you a chance to build profitable sales as well as a lot of customer goodwill. It's filled with facts showing farmers how the nitrogen in USS Ammonium Sulfate can boost farm profits.

"In the South . . . Bigger Profits from USS Ammonium Sulfate" isn't just made up of general farm information. Instead, it's filled with facts and figures that deal *specifically* with Southern fertilizing problems. The tips on increasing farm profits with ammonium sulfate were gathered from colleges, experimental stations, county agents and successful farmers in Southern states. In this folder, your customers will find valuable information on how USS Ammonium Sulfate can increase yields of cotton, corn, tobacco, grains, hay, pastures and sorghums. Don't miss this opportunity to help your customers make better profits.

Just clip and mail the attached coupon for your free supply of folders . . . then, make sure that every customer gets a copy. It'll pay you to do it, today!



USS Ammonium Sulfate

Clip and Mail

Room 5058 Agricultural Extension
United States Steel Corporation, 525 William Penn Place
Pittsburgh 30, Pa.

Please send me, free,_____copies of
"In the South, Bigger Profits from USS Ammonium Sulfate."

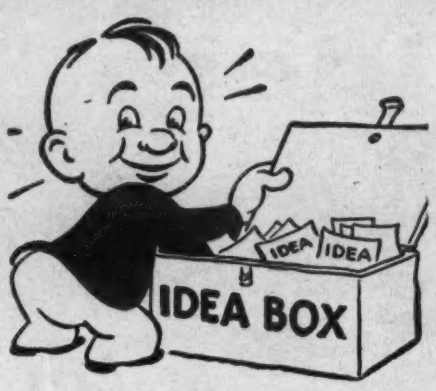
NAME.....

ADDRESS.....

CITY.....STATE.....

6-56

UNITED STATES STEEL



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6356—Corn Borer Bulletin

The Mackwin Co. has issued a folder entitled, "More Effective Corn Borer Control — Mackodee Granules G-20." The folder describes the firm's granular DDT product. Sections are devoted to what customers have to say about the product, the development of field tests which were begun in 1953 and the diluent and DDT level of the product. The folder adds that Mackwin product was "the only granular DDT used on large scale commercial acreage during 1955." The folder and other information may be secured by checking No. 6356 on the coupon and mailing it to Croplife.

No. 6357—Pulverizer Bulletin

The Pulva Corp. announces the availability of a new condensed bulletin No. 5510 describing the firm's line of high speed pulverizers. The firm's product, called by the trade name, Pulva-Sizer, is available in five sizes ranging from ¾ h.p. to 75 h.p. The bulletin states that there is a "size and type to meet your requirements . . . for fine grinding, blending and dispersing, granulating, wet milling or close particle size control." A partial list of companies who are users of Pulva equipment is included. Secure the brochure by checking No. 6357 on the coupon and mailing it to Croplife.

No. 6358—Bag Filling Machine

A new brochure on Kraft Bag Corporation's automatic open mouth bag filling machine, called by the trade name, Kraftpacker, has been prepared. The brochure is entitled, "What You Want to Know About the Kraft Bag Corp. Automatic Open Mouth Bag Filling Machine." Two pages of the brochure are devoted to a question and answer method of presenting information. The brochure states that the unit will handle all weights from 25 lb. to 200 lb. The back page is devoted to a diagram and text explaining how the machine works. Secure the brochure by checking No. 6358 on the coupon and mailing it to this publication.

No. 5358—Feeders

"Application of Principles of Instrumentation to Liquid and Dry Feeders" is the title of an eight-page preprint of a paper by Paul A. Coffman and issued by Omega Machine Co., division of B-I-F Industries, Inc. This preprint contains 11 flow-parts diagrams, and is part one on "Controllers." Purpose of this paper is to provide a basic knowledge of the application of instrument principles to gravimetric feeders, especially the function of the controller in its various forms. For your free copy of Preprint B-I-F-M65 check No. 5358 on the coupon and mail it to Feedstuffs.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6351—Coating

A new folder has been prepared by Alfred Hague & Co., Inc., on its rubber base paint called by the trade name Rubalt 7-C Red Primer. The folder states that the product provides "metals, wood, concrete and other surfaces with long lasting protection against moisture, acids, alkalies, electrolysis, hydrolysis, salt water, sunlight, dirt and grease, mineral oils and alcohols." The product dries in one hour, goes over damp surfaces and can be applied by spray or roller, according to the folder. Directions for use are also included in the folder. Secure the folder by checking No. 6351 on the coupon and mailing it to Croplife.

No. 6355—Pesticide Catalog

The York Chemical Co., Inc., has published a catalog of its pesticides and has it available for distribution. The company manufactures the Certox line of pesticides. The products described in the catalog include insect, roach and fly sprays, wettable powders, rodenticides, insecticide dusting powder, roach and ant powder, and pyrethrum insecticide dusting powder. Also the company's line of termite killers and wood preservers is described. Included are shipping and packing information. Secure the catalog by checking No. 6355 on the coupon and mailing it to Croplife.

No. 6352—Bag Packers

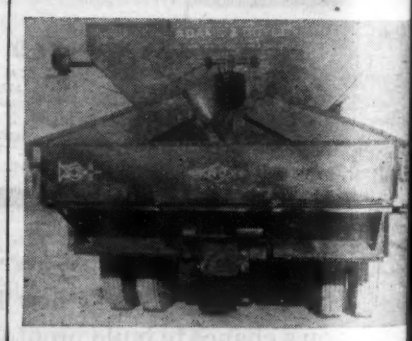
The H. L. Stoker Co. has prepared a new catalog entitled "Stoker Bag Packers," which describes its packers for filling multiwall bags and drums. The company's packers, according to the catalog, are designed to handle powdery, granular or pelleted materials including insecticides, chemicals, certain fertilizers and many other materials. Simple attachments make one packer fill valve bags, open mouth bags, drums and barrels, the catalog states. Five models are available, and all packers utilize a screw or auger to feed materials into bags and drums. Predetermined weights are generally held within less than plus or minus 0.5%, depending on the material being packed, the catalog states. Secure the catalog without charge by checking No. 6352 on the coupon and mailing it to Croplife.

No. 5309—Accounts Receivable

"Simplified accounts receivable for retailers" (SARR) is described in an 8-page folder released by Remington Rand. Based on the company's "simplified unit invoice accounting plan (SUIAP), "simplified accounts receivable for retailers" uses no accounting machines and requires no highly trained clerks. It is claimed to provide a complete, accurate and fast method of handling accounts receivable. The method uses Remington Rand's Kolect-A-Matic trays housed in Safe-Ledger equipment for 24-hour protection from fire, and provides an accounts receivable ledger composed of open, unpaid items only, a monthly statement for each customer, and a history of each account. Secure literature on this method by checking No. 5309 on the coupon and mailing it.

No. 6354—Fertilizer Spreader

A new line of fertilizer, lime and phosphate spreaders has been announced by Adams & Doyle, Inc. According to the manufacturer the most popular features are: The exclusive precision built gear box with spiral gears; hardened steel shafting with 1⅝-in. and 1¾-in. bearings; the solid 11-gauge steel sheets used in the sides and ends; the design that allows the



material to be dropped directly into the "eye" of the fan, permitting a more uniform and wider swath to be spread each time through the field. The feed gate can be set to spread uniformly from 100 lb. per acre up to four tons per acre. The spreaders are available in 7-ft., 8-ft., 10-ft. and 12-ft. sizes. Complete information and a two-color brochure are available. Check No. 6354 on the coupon and mail it to Croplife.

No. 6353—Rotary Tillers

The Midland Co., builder of garden tractors, announces that retail feed and fertilizer dealers are eligible for dealerships on its line of rotary tillers and garden tractors. Coincident with this announcement is the introduction of a new Midland rotary tiller. The tiller takes a 16-in. tillage swath, has special tines of rugged forged steel of the slicing, non-heeling type, designed to stay remarkably clean, minimizing wrapping and winding, the company states. It is powered by a Briggs & Stratton 2¾ h.p. air-cooled engine, equipped with recoil

Send me information on the items marked:

- ☐ No. 5309—Accounts Receivable
- ☐ No. 5358—Feeders
- ☐ No. 6343—Tractor-Shovel
- ☐ No. 6349—Planter Unit
- ☐ No. 6351—Coating
- ☐ No. 6352—Bag Packers
- ☐ No. 6353—Rotary Tillers
- ☐ No. 6354—Fertilizer Spreader
- ☐ No. 6355—Pesticide Catalog
- ☐ No. 6356—Corn Borer Bulletin
- ☐ No. 6357—Pulverizer Bulletin
- ☐ No. 6358—Bag Filling Machine
- ☐ No. 5361—Scale Bulletin

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

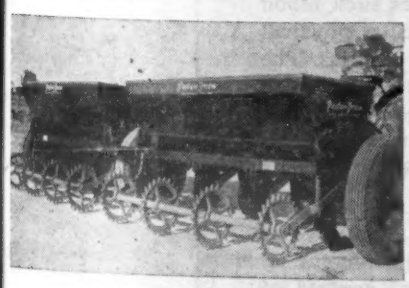
starter and quiet muffler. The unit is said to be exceptionally well-balanced, providing ease of operation and tilling efficiency usually found only in much more expensive equipment. Controls are within easy reach of the operator. For further information about the equipment and dealerships, circle No. 6353 on the coupon and drop it in the mail.

No. 5361—Scale Bulletin

A new six-page, two-color bulletin describing a versatile bulk weighing scale for process weighing is offered by Richardson Scale Co. Described is the model E-50 scale which is electrically controlled and pneumatically operated. It is said to be completely automatic in operation. It will weigh nearly all dry, granular, small lumpy, crushed and powdered materials. The bulletin discusses the scale's construction, capacity, accuracy, and process weighing features. It describes such special features as a hopper door flapper, different inlet chutes, recording counter, accurate knife edge weigh beam and optional agitator and subsidiary beam equipment. For more complete details check No. 5361 on the coupon and mail it to this publication.

No. 6349—Planter-Fertilizer Unit

Farmers who have a large acreage in pasture lands can now plant and fertilize these pastures in double-quick time with the new "Twin" Pasture Dream, claims its manufacturer, the Taylor Machine Works. Designed especially for use over large pasture areas, the unit is double the size of the company's standard Pasture Dream. It covers 13 ft. 4 in. each trip over. All other features are exactly the same as those of the standard machine. The company an-



nouncement states that many farmers are now planning to convert row-crop land into pastures and that either model is ideal for planting cover crops on row-crop land without seedbed preparation. To secure more complete details check No. 6349 on the coupon and mail it to Croplife.

No. 6343—Tractor-Shovel

The third and largest of the new four-wheel-drive tractor-shovels to be added to its "Payloader" line has been announced by the manufacturer, the Frank G. Hough Co. Designated as the model HO, the unit has a capacity of 2 cu. yds. It is similar in styling and outward appearance to the 1 and 1½ cu. yd. models HU and HH which were recently introduced. Features are "pry-out" bucket action; 40° of "breakout" at ground level and new standards of safety and stability. The clutch pedal has been eliminated and all shifts through all speed ranges in both forward and reverse can be made without coming to a stop or slowing down, company officials said. Check No. 6343 on the coupon, clip and mail it to secure more information.

TEXAS DEALER

(Continued from page 9)

same is true of dairymen who grow guar.

The store recommends heavy fertilization for the first year and a gradual diminishing, as the soil builds up. For instance, two years ago dairymen starting the use of fertilizer used a combination analysis of 60-60-30. This year, the analysis is down to 30-30-0 and the yield is better than it was two years ago, thanks to a soil-building process by the heavy utilization of fertilizers.

Mr. Heneke does not recommend that any farmer start using fertilizer until he has had a thorough analysis made of the different soils on his farm or ranch, so that he knows exactly what the soil needs for rebuilding and better crop production.

To foster the soil analysis program, the store not only urges prospects to have their soils analyzed but Mr. Heneke goes to the farms and ranches of any prospect who asks him, takes soil samples, packs them and sends them in himself, saving the farmer the trouble and eliminating the possibilities of improper sample-taking, packing and shipping.

The cost for an analysis is one dollar. That is all the farmer pays. The company asks nothing for its services, not even for the cost of packing and mailing the samples.

"This is one of the very best promotional ideas we have used," Mr. Heneke declares. "It's the sort of promotion that gets us talked about — favorably. One farmer tells another, and today we get frequent requests to go out and take samples for prospective buyers of fertilizers."

Mr. Cage and Mr. Hansen spend most of their time outside the store, calling on customers and prospects, in addition to operating their own turkey farms, and they talk fertilizers and watch for fertilizer prospects, along with promotion of other merchandise.

They use fertilizers to boost the growth of grass on their turkey ranges, and they suggest the same routine to other turkey-raisers on whom they call, pointing to their own ranges as proof of the value of fertilizers to increase grass growth.

Cotton Makes Profit Of $82 an Acre On Texas Farm

RENNER, TEXAS—A net profit of $82.47 an acre on 106.4 acres of cotton was made this year by C. L. Pilkinton, operator of the Texas Research Foundation's 308-acre demonstration farm. He received $10,875 from the sale of lint cotton, $1,221.95 from seed and $167.05 from the sale of remnant cotton seed.

Mr. Pilkinton spent $500 for aerial application of insecticides and $655 for defoliation. He also used liberal quantities of fertilizer in making the high cotton yield.

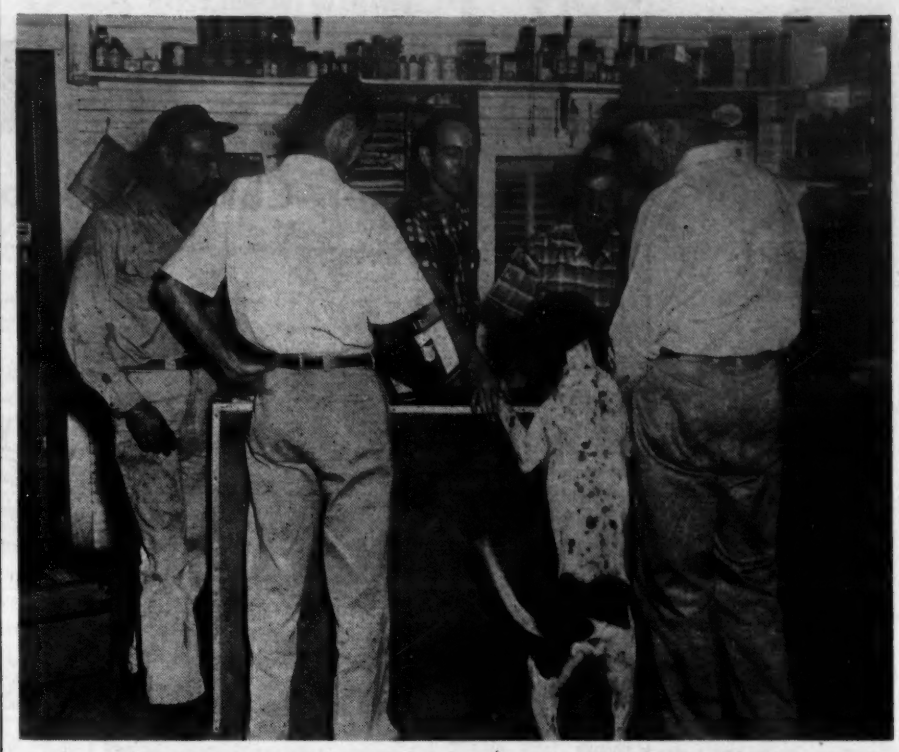
The cotton averaged seven tenths of a bale per acre, as compared with four tenths produced on the farm in 1954. The yield was made by following scientific farming principles, which included good mechanical operation, low cost of harvesting, rigid insect control and the use of fertilizer.

REDUCE CORN YIELDS

LEXINGTON, KY. — Cornborers and stalkrot reduced corn yields in Mason County, Ky., an estimated 11% this year.

The Bulletin Board

No. 14 in a series from the Spencer Chemical Magazine, "Today's Fertilizer Dealer"



Edgar and Bill Davis (behind the counter) hold a friendly get-together with some customers. Twenty years ago this store was a non-profit firm. Since then the Davises have built a highly profitable fertilizer business. For how they did it, read below:

Just Watch Their Dust!

By ALAN BEAVERS
Spencer Representative for Florida

Down in Hardee County, Florida, they say if you really want to go fishing just ask Bill Davis. But don't do it in idle conversation because you're apt to find yourself in a boat before you can add, "Maybe next week."

When not engaged in his favorite pastime, Bill and sons, Edgar and Murrell, who are his partners, have found time to turn a non-profit firm purchased for less than $100 in 1935, into a highly successful fertilizer business.

From its humble beginning in Wauchula, Fla., Davis Feed and Fertilizer Company, Inc., has grown to where it supports seven full-time employees —and sales volume is growing. Fertilizer, sold primarily in Hardee County, goes on citrus groves, truck crops, and improved pastures.

The Davises are consultants to about 80 citrus groves and truck farms in the area. Recommendations for groves include complete soil testing, liming, spraying and cultivation. In addition, Bill has the services one or two days each week of a fertilizer company fieldman in making personal calls on customers.

Their experience in handling fertilizer is backed with plenty of "book-learning." Edgar majored in agriculture at Florida University and Murrell is presently studying agriculture at Florida State College.

Advertising has a high priority on their list of good business practices. Rain gauges, thermometers and yardsticks are only a few of the "give-away" items which the Davises have made available. Fair display booths and ads in the local newspaper round out their advertising efforts.

Equipment used in their operation includes two semi-trailers and a tractor. This combination enables them to spot one trailer at a grove for larger orders, and the tractor returns to the plant for another load with the extra trailer.

Service, agricultural "know-how" and effective advertising are just some of of the important items which Davis Feed and Fertilizer has used to turn a non-profit business into a going, growing concern.

And the headline "Just Watch Their Dust" might well be a slogan for the firm, since the "dust" which it spreads in increasing quantities each year spells prosperity for merchant and farmer alike.

To Fertilizer Dealers ONLY

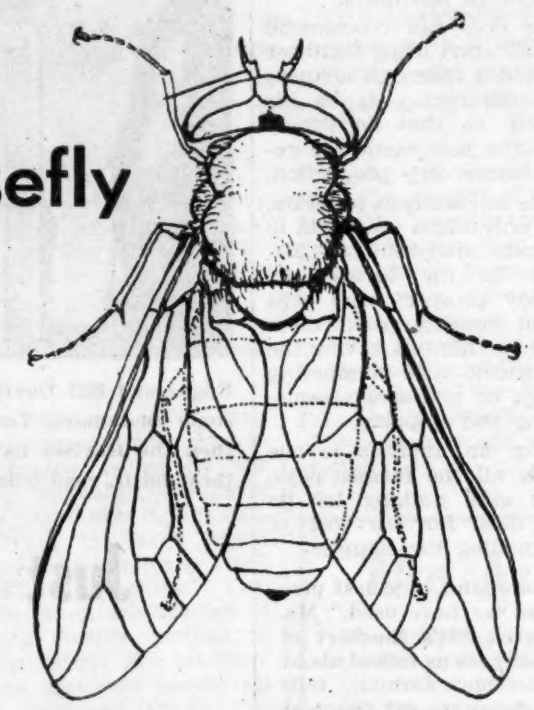
SPENCER CHEMICAL COMPANY
609 Dwight Building
Kansas City 5, Missouri
Gentlemen: I am a fertilizer dealer not presently receiving **Today's Fertilizer Dealer magazine.** Please send me a free subscription without obligation.

Name .....
Firm .....
Post Office..... State.....

BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

Horsefly



How to Identify

Horseflies are usually quite large, which is their most obvious characteristic. There are several hundred species of horseflies in the U.S. The front wings are horny, rigid and opaque. They are without veins, meeting in a line over the middle of the body and concealing the membranous rear wings. On most species, front wings are usually membranous, although often covered with scales or hairs. Horseflies range in length from less than a half inch to a full inch.

Habits of Horseflies

Most of the horsefly species breed in moist places. Development from egg to adult may require only a few months or even as much as from one to two years, depending upon the species. In the maggot stage, the insect is a couple of inches long and in this form is pointed at each end. They spend the winter in this form, hibernating in the mud of rivers or lakes and even wet land areas. The flies begin to appear in early summer, soon lay their eggs on leaves of aquatic plants where the maggots may later fall into the water. Once in the water, the maggots sink to the bottom and burrow into the mud.

Damage Done by Horseflies

Although these insects will attack many types of warm blooded animals, they prefer horses and mules. They cause great annoyance to livestock, and, more seriously, are carriers of diseases. Equine infectious anemia, or swamp fever, is thought to be carried by horseflies, as indicated by the fact that this disease reaches its height in the summer and by the persistence of the virus in the blood of infected hosts. Horseflies suck blood from the animals and cause acute physical discomfort to the animals in the process. The flies attack only in the daytime. Although horses and mules are the target of the major portion of their attacks, the horsefly causes economic damage on other domestic animals as well.

Control of Horsefly

Complete satisfactory methods of control of the horsefly have not been developed as yet. A number of chemicals have proved effective to a considerable extent, however. DDT and methoxychlor, pyrethrum and piperonyl butoxide, toxaphene, chlordane, aldrin and BHC are among the toxicants named by various sources as being useful. Repellents have also been beneficial. These included 10% butoxypolypropylene glycol 800 in deodorized kerosene, as well as pyrethrins and piperonyl butoxide.

Cartoon of pea aphid furnished Croplife through courtesy of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

FARM SERVICE DATA
Extension Station Reports

The pink bollworm will apparently survive winters under Mississippi Delta conditions. The worms survived in tests in bioclimatic cabinets at the Pink Bollworm Research Center at Brownsville, Texas, where the weather of Greenwood, Miss., was reproduced in a cabinet during the period from November 1, 1954, to July 31, 1955.

Temperature and humidity conditions, by hourly intervals were repeated through the use of fully automatic weather-making machinery. Pink bollworms were placed on Greenwood soil in the cabinet. Rainfall in the amount of 42 inches that fell at Greenwood was repeated during the experiment with a sprinkler can using distilled water. The temperature ranged from 18 degrees in January to 96 degrees in June.

Pink bollworm moths began emerging on May 7 and continued through July 23. Only 11 moths or 2.47% of the 445 larvae placed in the cabinet in the soil surface survived the Greenwood conditions last winter. Where a similar number in the bioclimatic cabinet was buried two inches below the soil surface, only one or 0.22%, survived.

★

Disease injury to alfalfa is likely to increase when the crop is grown in the same soil year after year, warns J. B. Fenne, plant pathologist at Virginia Polytechnic Institute.

He says this has been evident this fall. Many specimens of diseased alfalfa have been received at the VPI laboratories. Most of the growers sending in the specimens said the alfalfa was gradually dying out, usually in spots. Several different diseases have been found, but in almost every case injury had been greatly increased because alfalfa had been grown in the same soil for several years. As a result the soil had become heavily infested with various disease organisms and insects.

★

Crops and pastures, like buildings, must be constructed from firm foundations, according to W. R. Thompson, Mississippi extension agronomist. The first requirement for a good foundation for pastures and crops in most of Mississippi is lime, he said.

"I have never visited in a high acre area that was not both a good crop area and a good grass area," he pointed out. "While I do not believe that we can ever lime soil to the extent of the natural lime land, we can raise production and get better results from fertilizer by applying the needed lime to the soil."

★

Farmers in northeast Texas have demonstrated that their area can produce yields of many crops equal or superior to other sections of Texas. A year-end summary compiled by John H. Surovik, extension district agent, shows what happens when science is put to work on the farm and nature gives her cooperation.

Delta County farmers, for example, planted only 37,388 acres of cotton but their average lint yield per acre rose to go to 450 lb.

Mr. Surovik says it was a case of putting cotton on the land best suited for that crop; a majority of the farmers got after the bugs early and never let up in the fight; a lot of the cotton followed a legume crop; more commercial fertilizer was used; better seed of adapted varieties was planted and labor was available when needed both for production and harvesting. Other counties in the area also made good cotton crops, he said.

Corn yields in the district were good, and two Bowie County growers almost crashed the charmed 200 bu. an acre club. The top yield in the county was the 178.6 bu. an acre produced on the Moser Ranch north of DeKalb. Mr. Surovik said the corn was planted on bottomland and received applications of 100 lb. of anhydrous ammonia and 200 lb. of 20% superphosphate before planting.

The crop was sidedressed with 50 lb. of anhydrous ammonia; was planted in 40 inch rows with an 11 inch plant spacing in the row; was cultivated four times and irrigated twice. The fertilizer cost averaged only about three cents a bushel.

From north of Texarkana came a yield of 175 bu. an acre. The corn was planted on bottomland which had been in alfalfa from 1951 through 1953 and in cotton last year. Before planting the field received an application of 600 lb. of 12-12-12 fertilizer an acre while 150 lb. an acre of ammonium nitrate was applied later as a sidedressing. The corn was cultivated three times and received no supplemental water.

★

Liming peanut-crop land pays off, finds M. M. Gillman, Westville, Fla., farmer.

C. U. Storey, associate county agent for Holmes County, says Mr. Gillman limed his peanut land and had a yield of 1,956 lb. per acre; rented land also was limed and made 1,854 lb. per acre. A neighbor of Gillman's did not lime his peanut land and got a yield 200 lb. an acre less, Mr. Storey says.

★

A report which Levi Oliver, county agent, made on corn fertilizer tests in Caldwell County, Ky., includes an increase of over 24 bu. an acre on the farm of Lillard Watson. He applied 500 lb. of 10-10-10, 100 lb. of ammonium nitrate and 70 lb. of 6-8-6 at a cost of $23.68 an acre. This gave him an increase of 24.4 bu. an acre.

Lewis Jenkins used 200 lb. of 6-8-6 on an entire field. Soil tests showed the need of an additional 400 lb. of 10-10-10. Where this additional fertilizer was used, corn yields were increased 11.6 bu. an acre at a cost of $13.40.

Reginald Phelps first applied a heavy coat of manure on an entire field of corn. Then he tried varying amounts of fertilizer. Best results came from a mixture of 100 lb. an acre of 0-30-30 and ammonium nitrate. This was equal to an 11-24-24 fertilizer that cost $4.03 an acre. Yield was increased 13 bu. an acre.

A yield of 112 bu. of corn an acre on two acres of creek bottom was reported by R. C. Tapp, a 4-H club boy in Henderson County, Ky. His report to William Hendrick, assistant county agent, stated that he put on 100 lb. of 60% potash an acre, 180 lb. of 0-25-25 and 125 lb. of 4-16-16 fertilizer. This was plowed under. In addition, he put 100 lb. of 4-16-16 in the row and applied 65 lb. of 85% anhydrous ammonia an acre.

Finley M. Mayes told W. B. Howell, county agent, Mercer County, Ky., that he saved more than four tons of alfalfa hay an acre from 114 acres on his 350-acre farm. He did this despite wet weather causing the loss of about half of the first crop. One hundred and seventy-five tons of alfalfa were put into a silo.

Mr. Howell said Mr. Mayes maintains a stand of alfalfa for several years by top-dressing each summer with fertilizer. This year he used 200 lb. of 60% muriate of potash an acre.

Undesirable hardwood trees take water and plant food from the soil which could be producing forage for livestock, says G. O. Hoffman, Texas extension range specialist. Too, he adds, these trees often grow on the most productive land or in fence rows and reduce the yields of cultivated crops as well as pastures.

Mr. Hoffman says there are several reasons why chemical control can be used with success during the winter season. Research and demonstrations have shown the winter season a good time for treating individual trees. The job is easier because of cooler weather. It is easier to get around the trees. There are fewer susceptible crops growing which might be damaged and more labor is usually available for doing the work.

The specialist says a 2,4,5-T oil solution or ammate crystals or an ammate solution has given consistent results for individual tree treatment.

★

A fertilizer test conducted by the Texas Agricultural Experiment Station during the 1954-55 season in the Lower Rio Grande Valley indicates that nitrogen and phosphorus fertilizers influence the yield and quality of marketable lettuce.

When applied at 60 and 120 lb. per acre, nitrogen fertilizers increased the yields of marketable lettuce by 30 and 54%, respectively. Nitrogen also increased the average headweights.

Phosphorus applications did not increase the total yield of marketable lettuce but did increase the yields of the larger headsize classes. Phosphorus, applied at the rate of 60 lb. per acre, significantly increased the headweights.

★

Efficient growers are expanding their apple production, while the less efficient are dropping out of the picture. And this is a trend that will likely continue for several more years, in the thinking of agricultural economists at Virginia Polytechnic Institute.

They say this situation does not necessarily mean that small-volume producers are doomed to failure; but that both small and large producers must become more efficient in production and marketing if the apple industry is to keep its present competitive position and give a fair return for labor, capital and management.

The total bearing acreage in commercial apple areas in the United States has declined steadily since 1935, except in the western states where the decline stopped in 1943 and production has since been increasing at a steady rate. Yields have been going up over the same period, and have partially offset the effect of the drop in bearing acreage on total production.

Virginia production is expected to be back to normal in 1956, and growers should have a much better year than in 1955, the economists predict.

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

THE THREE SISTERS OF 1956
Faith, Hope and Love

Faith is always dressed in work clothes; dressed for action . . . it's faith showing herself when we buy a new plow point, a cultivator or a ton of 10-10-10 fertilizer . . . it's faith when we turn the mellow earth and plant good seed, as well as when we lime our soils and use the correct amount of nitrogen, phosphorus and potash.

It's faith when we make our yearly plans and work out our crop rotations . . . and when we get a neighbor to join the community club or the youngsters to take a project in the 4-H Club . . . and it is the same kind of faith when we stock our shelves and store rooms with new merchandise to serve the public better.

Hope always has her party dress on . . . we hope for a good stand of grass, alfalfa, small grain, corn or potatoes . . . we hope for a good season, with plenty of sunshine and rain, that we might make a good yield.

And too, we hope for a good business year in town, so we might make a profit . . . fast turnovers . . . hope wishes for a good community club or an outstanding civic club.

Love . . . we love our land and communities; we love our way of life in the country and city . . . we love to see our children develop and make master farmers and good business men . . . we love to watch a good school teacher or a competent professional person.

Hope and faith won't make good dairymen, neither will hope and faith make good business men or good students . . . all need to love whatever they are doing . . . our everyday problems . . . our freedom.

Faith, hope and love are the salt of the earth. . . . Happy new year to you all.

Agronomist Honored for Service to Agriculture

BLACKSBURG, VA. — Dr. H. L. Dunton, head of the department of agronomy at Virginia Polytechnic Institute since 1947, is named "Man of the Year in Service to Virginia Agriculture" in the January issue of The Progressive Farmer, southern agricultural magazine.

The publication honors Dr. Dunton for several specific services. In part, the tribute reads:

"When he first became head of the agronomy department, he felt that one of the most pressing needs was to improve Virginia's crop yields. Various programs conducted by the department such as the 'more corn per acre' program, have helped do this with a profit to the farmer. For instance the corn yield during the late 40's to 1950 increased more per acre in Virginia than in any other state."

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Reports from Louisiana and South Carolina indicate that larger numbers of boll weevil entered hibernation this year than for several years past. This year's average represents 2.6 times more weevils than were found in the previous high record year of 1953 and five times the average number found a year ago.

An entomological team of USDA and Iowa State College men described their methods of controlling corn borer with granular insecticides, at a meeting at Ames, Iowa, Dec. 9. They reported that the granular method of borer control has now been added to the list of recommended control measures in the 14 states of the north-central region.

The Ozark-Mahoning Co., Tulsa, Okla., announced plans to build an ammonium phosphate plant at Tulsa. The plant will cost more than a million dollars. About 500,000 tons a year of high analysis water soluble complex fertilizers will be produced by the new facility.

American Cyanamid Co. announced plans to build a new triple superphosphate plant at Brewster, Fla. This will be part of the company's $40 to $50 million expansion and modernization program scheduled for 1956. It will be the firm's first facility for production of upgraded phosphate.

Grasshopper infestations in 1956 promise to be more than three times that of 1955 on western rangelands, the USDA said. Mormon crickets are expected to be present in about the same numbers as they were this year. . . . Lion Oil Co. formed development and engineering sections within its manufacturing department.

Weed control, insect control, defoliation and fertilization were named as necessary practices to achieve lower unit-of-production costs at the first annual Beltwide Cotton Production Conference held at Memphis, Tenn. Dec. 15-16. About 1000 persons were in attendance.

California Spray-Chemical Corp. named Agricultural Ammonia Service, Inc., as sole authorized distributor of Calspray's products, Ortho NH_3 in designated portions of California. . . . A British authority on the nitrogen trade, Aitkman (London) Ltd., predicted a considerable surplus of nitrogen throughout the world in 1956. Much of the over-supply, it says, will be in the U.S.

The National Agricultural Chemicals Assn., Washington, D.C., said in a year-end statement, that production and sales activity in the agricultural chemical industry picked up in 1955, but due to intense competition within the trade, profits were not as great as such a volume might indicate. Prospects for the 1956 season appear to be good, also, the NAC said.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., announced $900,000 in grants to colleges and universities as an aid to education. Science courses will receive a substantial portion of the gift, it was stated. . . . Spencer Chemical Co. announced that it will erect a new research center on a suburban site near Kansas City. It is expected to be completed sometime in the spring of 1957.

American Cyanamid Co. announced a new systemic insecticide, Thimet, which the makers stated has been successful in the control of insects in cotton fields.

Although gross tonnage of fertilizer materials declined during the 1954-55 crop year, the plant food content was up considerably, according to a report issued by the National Plant Food Institute. Higher analyses are given as the reason for this increase. . . . The International Cooperation Administration announced a $19½ million fertilizer authorization for the Republic of Korea. Sources of material will be world-wide.

Pesticide carry-over stocks were reported by USDA to be 9% smaller than last year's year-end inventory. Department of Agriculture officials emphasized, however, that over-all stocks of pesticidal materials are adequate despite the decrease in manufacturers' stocks.

The Oklahoma Plant Food Educational Society's conference, held at Stillwater Nov. 29-30, emphasized the important role played by fertilizers as acreage restrictions are imposed. Some 165 persons were present at the meeting. . . . U.S. Industrial Chemicals Co. announced that it will build a new plant at Tuscola, Ill., to make 75% phosphoric acid.

The Agricultural Ammonia Institute held its annual meeting in Kansas City Dec. 5-7, with the emphasis being placed on stepped up sales effort for the coming year. The industry, and particularly the dealers, must become more aggressive in selling the farmer, if satisfactory growth is to be continued, it was pointed out.

In its "Farm Cost Situation Report," the U. S. Department of Agriculture lauded both the fertilizer and pesticide industries for being of service to agriculture in keeping prices down. A chart prepared by the Agricultural Research Service showed fertilizers to be almost as inexpensive as they were in 1947-49, as compared to tremendous advances in taxes, machinery, labor, etc.

The Food and Drug Administration gave approval to the use of an antibiotic, "Acronize Chlortetracycline" as an economic poison. This Aureomycin product is manufactured by American Cyanamid Co. . . . The Entomological Society of America, in its annual meeting at Cincinnati, Ohio, named as president, Dr. B. A. Porter, USDA, to succeed Dr. George C. Decker, Illinois Natural History Survey, Urbana, Ill.

North Carolina Keeps Same Recommendations For 1956 Bug Control

RALEIGH, N.C.—Recounting work done toward control of cotton insects during the 1955 season, George D. Jones, in charge of extension entomology at the N. Carolina Agricultural Experiment Station said that research in 1955 indicates that of the new insecticides available, none were found to be superior to the ones now recommended for use in the state. The work also indicated that in spite of the heavy rainfall in many sections during the latter part of the season, stepping up the dosage of insecticide per acre per application (from maximum recommended rates) to twice the regular amount did not result in an increase in the control of either the boll weevil or the bollworm. However, it was found that shortening the interval during the latter part of the season between applications (from 5 to 3 days) did materially help in the control of these pests.

The bollworm proved to be a more damaging pest in 1955 than was the boll weevil in much of the Piedmont and East Central areas. Insect control was satisfactory in most sections and on most farms throughout the state until late season when three storms struck the eastern cotton growing sections. Many fields which showed promise of high yields were reduced over 50% by boll rot, boll weevils and bollworms.

Farmers were unable to get into the fields for the late applications. The weather also delayed maturity and prevented early and effective use of defoliants. As was pointed out earlier, the season started off with but few weevils in scattered sections. Farmers generally kept the pests under control and had, in early August, one of the best yields in prospect for several years.

Fertilizer Sales in Texas 5% Greater than Last Year

COLLEGE STATION, TEXAS — Fertilizer sales in Texas during the 1954-55 season were 5% greater than those of the previous period, the Texas A&M College has announced. Total of 588,061 tons was sold during the later period.

Of this total, mixed fertilizers accounted for 306,410 tons, or 52% of the total. Nitrogenous materials, superphosphates and ammoniated phosphates accounted for 281,651 tons, or 48% of the total.

The station observes in its report that "too large a proportion of the year's total sales are made during just a few months. Nearly two-thirds of the total nitrogen and potash and half of available phosphoric acid used during the year are sold during the four month period from February through May," it says.

Dates Set for Alabama Pest Control Conference

AUBURN, ALA. — The Alabama Pest Control Conference will be held at the Alabama Polytechnic Institute here Feb. 22-24, according to a recent announcement by Kenneth B. Roy of the Agricultural Experiment Station here.

Participating agencies will include the division of plant industry, the State Department of Agriculture and Industries, the State Department of Aeronautics, the Alabama Flying Farmers Assn. and various pesticide manufacturers and distributors.

Fewer Fertilizer Grades Needed for Alabama Soils

MONTGOMERY, ALA.—Soil testing results and their application to fertilizer usage in Alabama was the principal topic of discussion at the first annual meeting of the recent Alabama Soil Fertility Society, held here. More than 200 representatives of the fertilizer and related industries, and state and federal agricultural agencies were in attendance.

Experiments show that Alabama needs only seven fertilizer ratios to serve in all soil and crop conditions in the state, Dr. Howard T. Rogers, head of the department of agronomy and soils at Alabama Polytechnic Institute, Auburn, told the group. Grades which would fit into the recommended ratios were suggested for consideration by the body. They were taken under advisement with further action indicated at subsequent meetings.

Other speakers included Paul T. Truitt, executive vice president of the National Plant Food Institute, Washington, D.C., who discussed the program of his organization, and Dr. J. L. Brakefield, public relations counsel of the Liberty National Life Insurance Co., who pointed out some of the problems involved in industry and customer relationships.

Officers re-elected for the ensuing year were Frank Boyd, agronomist, Virginia-Carolina Chemical Corp., president; Bill Nichols, Sylacauga Fertilizer Co., vice president; F. Nettles, Peterman Agricultural Co., vice president, and Charles Summerour, American Potash Institute, secretary-treasurer.

Re-elected as directors for a term of one year were B. V. Bender, International Minerals & Chemical Corp.; Earl Cooper, Roanoke Guano Co.; J. B. Cunningham, Valley Fertilizer Co., and W. W. Belser, U.S. Steel Corp.

Newly elected directors for a term of two years include E. W. Bryant, Dolcito Quarry Co.; Bernard Fitzgerald, Shell Oil Co.; E. P. Garrett, Tennessee Valley Fertilizer Cooperative, and A. A. Morris, Dothan Guano Co.

Record Yield of 251.5 Bu. Wins Texas Corn Contest

MULESHOE, TEXAS—The Turner Brothers have done it again. Last year Doyce Turner won the annual Texas hybrid corn contest with a record yield of 204.3 bu. per acre.

This year Royce beat his brother's record by more than 47 bu. He set a new state record with a whopping 251.5 bu. to the acre.

He planted Texas Hybrid 17-W the first week in May and harvested it Oct. 24. The crop was cultivated only twice but was irrigated five times. He put on 60 lb. of anhydrous ammonia and 300 lb. of 16-20-0 at planting time.

The contest is sponsored by the Texas Hybrid Seed Corn Assn., and the first prize is $100 in cash and a plaque and the designation as champion corn grower of Texas.

Other winners in the state are Austin De Laughter of Texarkana, Texas, who produced 170 bu. to the acre of Texas Hybrid 30 on a field that was not irrigated; Otto Moser of DeKalb, who grew 178.6 bu. per acre, and R. E. House, of Dime Box, Texas, who produced 152 bu. per acre. Mr. Moser's corn was irrigated, while Mr. House's was grown on dryland.

ANTIBIOTICS

(Continued from page 1)

dial leaf spot, a destructive dis-se of sesame. He said that the ease organisms were actually dicated from sesame seed in the periments.

The report on control of downy dew and late blight by scientists meyer, Doolittle and Wester indi-d not only that antibiotic control these diseases is possible, but that ter control was obtained with de forms of streptomycin than pure forms. It was also found t addition of copper to the anti-tic sprays gave effective disease trol with very low dosages of ibiotic.

presenting the paper, Dr. Zau-yer said that these experimental cesses have followed the pattern earlier work on antibiotic control vegetable diseases such as halo ght of beans, bacterial spot of natoes and peppers, potato seed-ce decay, black rot of rutabagas bacterial blight of celery.

The single exception in this lies the fact that although strepto-ycin was thought earlier to be ore or less specific for diseases used by bacteria, it is now indi-ted that this antibiotic is also fective against at least these two ngus-caused diseases (downy ldew and late blight).

The effective results obtained inst these diseases with low-age sprays containing strepto-cin and copper are a promising roach, Dr. Zaumeyer believes, to -cost, practical disease control for grower.

n reporting the Beltsville research, Zaumeyer said that four different mercial antibiotic formulations—rimycin, Phytomycin, Agristrep, Acco Streptomycin—were applied lima-bean foliage at the rate of parts of drug to one million parts water. The antibiotic sprays al-t completely prevented downy-dew infection of the lima beans, ch were inoculated with a spore pension of the fungus 24 hours r the streptomycin treatment.

Under similar experimental con-ions, tomato seedlings treated th the same dosages of strepto-ycin prior to inoculation with late ght proved equally resistant to fection. Disease-inoculated lima-an and tomato seedlings that re not treated with an antibiotic came severely infected.

The fact that better disease control achieved with crude strepto-cin than with pure forms of the g is probably due, Dr. Zaumeyer , to the presence of some un-ntified ingredient in the crude ma-al that is absent in the pure anti-ic.

rials made to compare combina-streptomycin-copper sprays con-ing only one or the other of these erials showed that a combination taining 50 ppm. of both the chemi-gave slightly better control of ny mildew than did sprays con-ing 50 ppm. of streptomycin, and h better control than sprays con-ing 50 ppm. of copper. Sprays taining only 25 ppm. of strepto-in were completely ineffective.

describing his successful experi-ts with streptomycin for control acterial leaf spot of sesame, Mr. mas reported his procedure for ting the seeds. He said that nat-y-infected seeds of Palmetto ety sesame were soaked for 30 utes in a water solution contain-250 ppm. of streptomycin, and were planted in isolated plots Maryland and Virginia for com-son with other plots of untreated ted seeds. No evidence of leaf was found in any of the sesame grown from treated seed, but the blight was common in the untreated sesame, he said.

Further studies by Mr. Thomas are expected to establish the most effective antibiotic dosage, soaking time, and cost of the treatment. Practical control of sesame blight would be an important step in the advancement of sesame as an American oilseed crop, it was pointed out.

Only recently, other USDA and state experiment station research scientists have successfully developed sesame varieties that can be machine-harvested without shattering the oil-containing seeds. Seed of two new varieties—Palmetto and Rio—were generally available to growers in southern states for the first time this fall.

Calspray Building New Bulk Fertilizer Storage Warehouse

RICHMOND, CAL.—As part of its current expansion program (Croplife, Dec. 19, page 1) California Spray-Chemical Corp. is planning a new bulk storage warehouse; the first in a series of structures the firm expects to build in its program.

The new warehouse will be 580 ft. long, 80 ft. wide and 50 ft. high, according to plans. It was designed by the structural engineering firm of Simpson and Stratta, to store various forms of pelletized, dry fertilizers and ammonium sulfate, according to P. S. Williams, vice president and chief engineer of the company.

Some 80 square feet of the new building will house bagging and shipping facilities, he said.

In conjunction with its $16,000,000 fertilizer plant now under construction, Calspray has awarded a contract to the F. P. Lathrop Co. for construction of a building to house office facilities, and also to be used as a change room for production personnel of the plant.

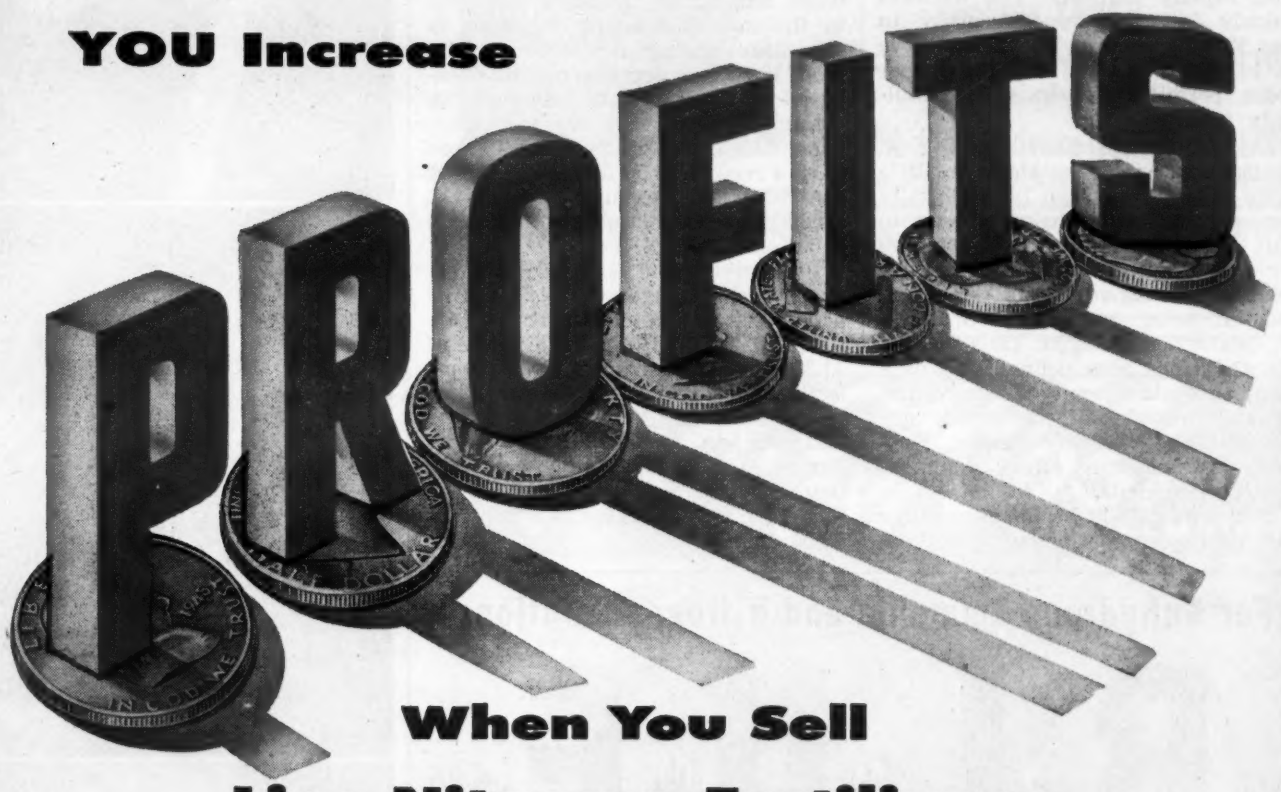
The offices will provide needed additional space for the fertilizer plant management.

Calspray has also built a new bio-research lab at Tank Farm Hill, also in Richmond, and has extended laboratory facilities and office space at its main plant as part of the general expansion program.

Kentucky Sales

LEXINGTON, KY. — Fertilizer sales in Kentucky during November totaled 8,287 tons, compared with 9,395 tons in November a year earlier, according to the state Department of Feed & Fertilizer. The November, 1955, total included 4,238 tons of mixed goods and 4,004 tons of materials.

YOU Increase



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Lion Sulphate of Ammonia—White, uniform, free flowing crystals. Guaranteed 21% nitrogen.

Retailers who market Lion nitrogen fertilizers are enjoying sales increases and expanding profits, because the Lion brand is being continuously *pre-sold* to farmers—and retailers reap the benefits.

Throughout the year, Lion advertising appears in leading state farm publications, and in Farm & Ranch-Southern Agriculturist, Prairie Farmer, Progressive Farmer, and Wallaces' Farmer & Iowa Homestead. These advertisements tell farmers—again and again—the *facts* about plant foods: that the farmer who uses the proper kinds and amounts of commercial fertilizers will increase his yields and his profits. This advertising sells fertilizers, for Lion and for *you!*

Lion's two giant chemical plants have the capacity to assure you a steady supply of the most popular and economical types of nitrogen fertilizers. In fact, Lion is the world's largest manufacturer of prilled ammonium nitrate, and one of the industry's leaders in producing other nitrogen fertilizer materials.

It's easy to sell nitrogen fertilizers with the Lion emblem on the bag, or Lion's anhydrous ammonia. And easier selling adds up to *more profits for you.*

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USDA Tests New Biological Means Of Insect Control

WASHINGTON, D.C. — Experimental success with a newly discovered nematode-borne disease, which kills a great many different kinds of insects, has been announced by the U.S. Department of Agriculture.

If further research, now underway, upholds preliminary findings, the disease may prove to have broad-scale application and value to American agriculture in controlling insect pests, the department says.

Dr. S. R. Dutky, insect pathologist of USDA's Agricultural Research Service, reports that the new disease has so far proved deadly to the codling moth, the corn earworm, the boll weevil and pink bollworm, the vegetable weevil, a cabbage worm, and the white fringed beetle.

The disease, Dr. Dutky says, is actually a nematode-bacteria combination. Nematodes, in piercing the intestine of attacked insect larvae or adults, release disease bacteria that rapidly multiply. The bacteria quickly kill the insect—usually in less than 24 hours. They also serve as a source of food for the nematodes, permitting them also to multiply rapidly.

Dr. Dutky discovered this new, bacteria-carrying nematode a little more than a year ago in bacterially diseased codling-moth larvae sent to him by Dr. W. S. Hough of the Virginia Agricultural Experiment Station. Taxonomic studies of the nematode are being made by Dr. G. Steiner, USDA nematologist. Thus far, the nematode has been defined only as a member of the family Steinernematidae. Nematodes of this family are known to attack only insects. They have no injurious effect on man, plants, or animals.

The nematode in its infective stage can survive long periods without food. This permits survival when hosts are not available.

So far, tests have shown that the nematodes can be forced through a highpressure spray nozzle without too great a degree of mortality. They are also quite resistant to most insecticides in common use. These two facts make it likely that both the nematodes and insecticides could be used simultaneously for insect control.

Dr. Dutky points out that despite the promise of this parasitic disease, much research must be done before it can become of real value to farmers. Its potential worth should be increased as the host range of insects on which it is effective and the time and mode of treatment are more fully determined.

Chemical Employment Dips in California

SAN FRANCISCO — Employment in chemical industries in California declined fractionally between August and September of this year but still remained well above the figures for the corresponding months of 1954.

There were an estimated 36,600 wage and salary workers employed in the manufacture of chemicals in the state during September, a dip from 36,700 the previous month. Compared to September of last year the estimated gain was 700 workers—from 35,900. The figures are taken from a report of the Division of Labor Statistics and Research of the California State Department of Industrial Relations.

Production and related workers earned an average of $89.21 during each week of September at the rate of $2.16 an hour for an average of 41.3 hours. This earnings figure represented a gain of more than a dollar from $88.13 at the rate of $2.14 per hour for an average of 41.2 hours during August. The average earnings figures compare with $84.27 earned in September, 1954, for 41.3 hours at $2.04 an hour.

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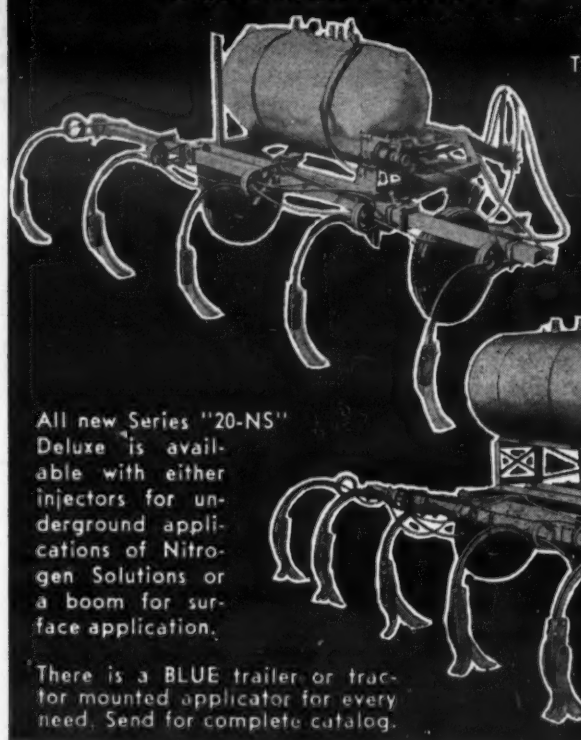

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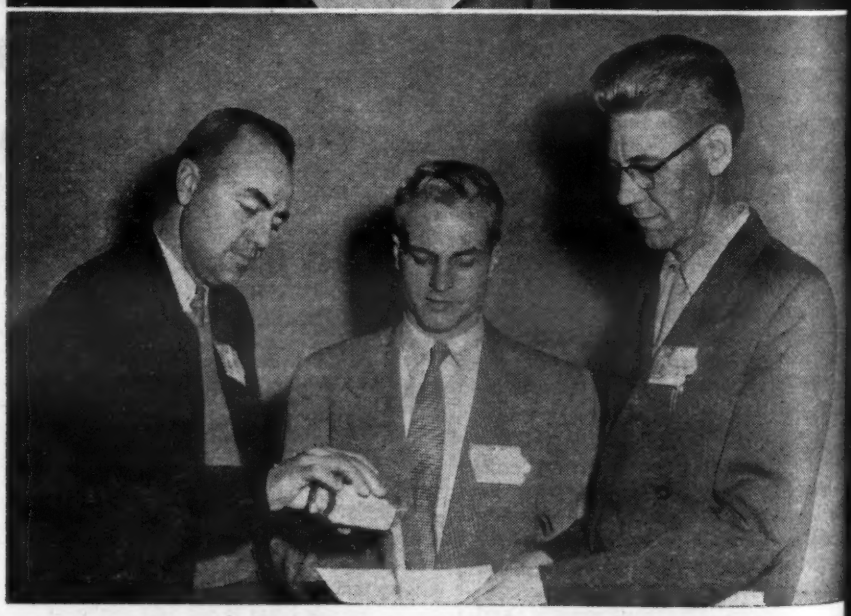

DISCUSS GRANULAR INSECTICIDES—At Ames, Iowa, some 130 me from 14 states met Dec. 9 to discuss the use of granular insecticides for co trol of European corn borer (Croplife, issue of Dec. 26, page 1). In the to photo, Dr. Tom Brindley, right, in charge of regional laboratory where cor borer control work was done, discusses situation with B. B. McHan, lef Quincy, Ill., and Gib Wood, Omaha, Neb. Both of the latter are with Calcium Carbonate Co.

Second photo: (L to R) Walter Lovely, agricultural engineer who worke on application equipment in connection with granular insecticides; Bo Merrill, John Deere Co., Moline, Ill., and R. A. Norton, Ames, Ia., Ingersol Products Div. of Borg-Warner Corp.

Third picture: Dr. H. C. Cox (center), shows photographic evidence tha solvents in granules can burn corn plants. Viewing the evidence are Her Harris, Mackwin Company, Winona, Minn. (right), and Robert W. Wer Minerals & Chemicals Corp., Menlo Park, N.J.

Lower photo: (L to R) Earle Raun, Iowa State College, pouring granular DDT on a paper. Center is L. K. Cutkomp, University of Minnesota entomol ogist and at right is John Lofgren, South Dakota State College.

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Gloomicides

An over-enthusiastic fisherman was haled into court, charged with catching 18 more black bass than the law allows. "Guilty or not guilty?" asked the judge.

"Guilty," the young man admitted.

"Ten dollars and costs," announced the judge.

The defendant paid the fine, then asked cheerfully, "And now, your honor, may I have several copies of the court record made to take back to show my friends?"

★

If Adam came back to earth, the only thing he would recognize would be the jokes.

★

A four-year-old had gotten a terrible sunburn and it was beginning to peel. One day his mother heard him muttering to himself as he washed his face: "Only four years old and wearing out already."

★

Anatomy is very strange. When you stick your nose in another fellow's business you usually put your foot in it.

★

Merchant—"When I was a boy, my greatest ambition was to be a pirate."

Customer—"Congratulations."

★

Said one farmer to another: "I have a rooster that is so lazy that every morning, when the rooster on the next farm crows, my rooster just listens and nods his head in approval."

★

A camera enthusiast went big-game hunting in Africa. One of his companions was chased by a lion, and fled for camp with the beast at his heels.

As the poor fellow ran he heard a shout, and looked hopefully toward the thicket whence the sound came, for he thought help was at hand.

But it was the camera man who came bounding forth with his camera raised, "Hold on, there," he yelled. "Slower! You're too far ahead. I can't get you both in."

★

Reporter: "To what do you attribute your success?"

Businessman: "Well, I'm trying to make an honest living, and there is no competition."

★

A professional pickpocket married a female who was tops in the same racket. Their minds were set on their offspring becoming the greatest pickpocket in the world. When the child was born it had one defect—its right hand was curled up in a chubby fist and couldn't be opened. After an hour's work, the nurses finally opened the tiny hand. Inside, they found the doctor's watch.

★

In the saloon in the Wild West there was trouble afoot. Guns were blazing when a mild-looking man strolled in right through the battle and leaned negligently against the bar. After a few moments the shooting died down and all was quiet. The barman came up and congratulated the man on his perfect nerve control. "Oh, that's all right," he said with a smile. "I'm quite safe. I owe everybody in the place money."

★

If your neighbor insists on keeping his radio blaring until 2 a.m., call him up at 4 a.m. and tell him how much you liked the programs.

★

A young lady down our street slipped on the ice yesterday. It bruised her somewhat, and slightly injured her otherwise.

James Wirwille

James Wirwille Named To Velsicol Position

CHICAGO — James Wirwille has joined the Velsicol Chemical Corporation agricultural chemicals sales staff, according to an announcement by John F. Kirk, vice president in charge of sales.

Mr. Wirwille will represent the company in the states of Ohio, Michigan, Kentucky, West Virginia, Western New York, and Eastern Ontario in Canada.

Mr. Wirwille comes to Velsicol from the Pennsylvania Salt Manufacturing Company where he served as technical sales representative for its agricultural chemicals division. Prior to that he was on the staff of the United States Department of Agriculture's plant hormone division, at Beltsville, Maryland. He is a graduate of the University of Maryland where he specialized in plant physiology.

Velsicol Chemical Corporation produces technical Chlordane, Heptachlor and Endrin for agricultural and household insect control. The firm's other products include a number of industrial resins, solvents, and other chemicals.

Virginia Area Plans Fruit Tree Survey

WINCHESTER, VA. — Apple and peach growers in this Shenandoah Valley of Virginia fruit belt will launch a tree survey—the first of its kind in Virginia—soon.

The survey, sponsored by the Virginia State Horticultural Society and the Winchester and Frederick County Fruit Growers Assn., will center around the protection of orchards through additional spraying uses.

Dr. H. A. Rollins of the Winchester Fruit Research Laboratory, speaking at a meeting of the growers, called for greater spraying for mouse control.

He said that 7,000 acres of orchards in Northern Virginia are now undergoing spraying and that the problem this year is more serious than at any time in commercial fruit growing.

James Chaffins, marketing agent for the State Division of Markets, will serve as adviser on the tree survey. He called attention to the annual meeting of the horticultural society to be held in Roanoke, January 23-25, at which time further plans will be devised.

Florida Consumption

TALLAHASSEE— November fertilizer consumption in Florida totaled 227,988 tons, according to the Florida Department of Agriculture. The total includes 160,444 tons of mixed goods and 67,544 tons of materials.

Fertilizer, Insect Control Boost Yields On Mississippi Farm

STATE COLLEGE, MISS. — Complete insect control and the application of recommended amounts of fertilizer are largely credited with raising the cotton yield 65% above 1954 on the V. P. Street farm in Tippah County, Mississippi.

In 1954, Mr. Street picked nine bales of cotton from seven and a half acres of bottom land. In 1955 from the same land, he made 14 bales.

He credits this increased yield to following the insect control recommendations of his associate county agent, C. B. Betterton of Ripley, and to the use of the amounts and kinds of fertilizer which a soil analysis indicated were needed on the land.

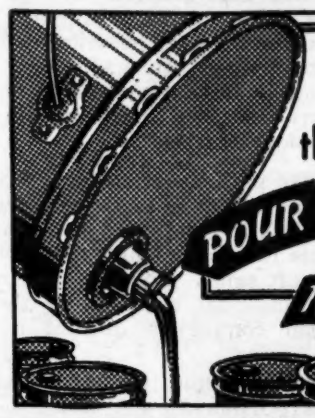
A participant in the balanced farm and home program conducted by the Agricultural Extension Service at Mississippi State College through the county and home demonstration agents' office, Mr. Street says that the soils test let him know what the land needed.

"Last year I used 500 lb. of 5-10-10 mixed fertilizer under the cotton and 100 lb. of ammonium nitrate as a side dressing. This year, after the soils test showed my soil needed additional potash, I used 200 lb. of potash, 500 lb. of 6-8-8 under the cotton and side dressed with 200 lb. of ammonium nitrate," he said.

"I took samples from my corn land, too. Last year I planted 20 acres to corn and grew 600 bushels. This year, I will make 1,000 bushels from the same 20 acres."

AGRONOMIST NAMED

STATE COLLEGE, N.M. — Dr. William S. McGuire has been appointed associate agronomist in charge of the Southeastern Substation of the Agricultural Experiment Station of New Mexico A&M College, Dr. R. A. Nichols, dean and director of agriculture at the College, has announced. Dr. McGuire reported for work at the Artesia substation, Jan. 1.



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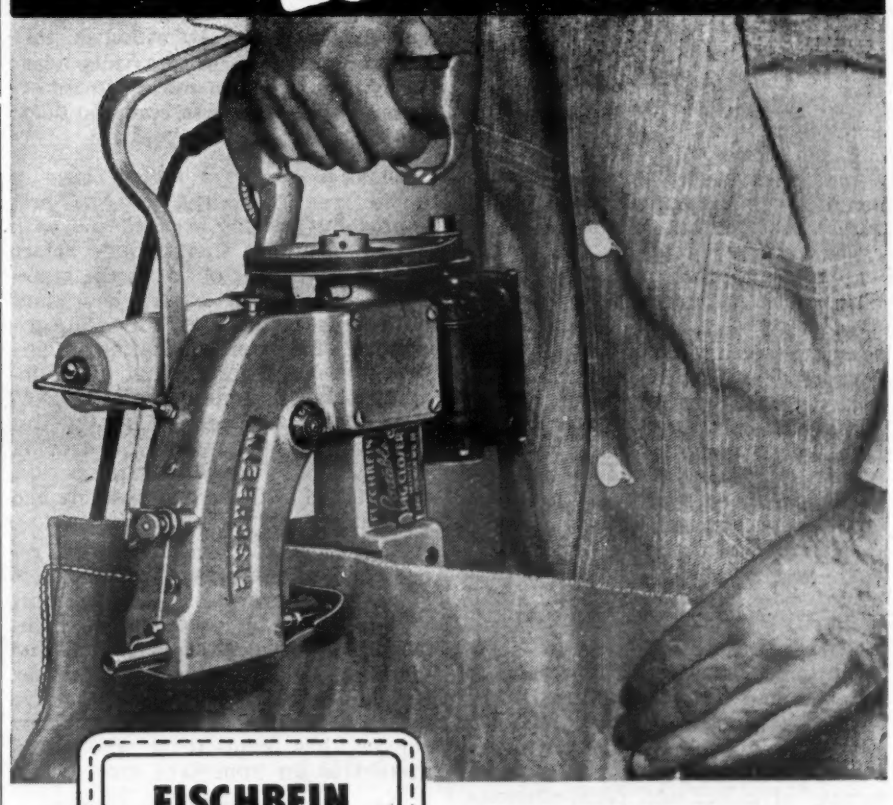

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PHYTOPATHS

(Continued from page 1)

to report on fungicidal experiments made during 1955 and also to describe various new materials which may be available either for testing or for commercial use next season.

Sessions were held to cover diseases of field crops, ornamentals and forest trees; antibiotics and chemotherapeutants; vegetable crops; cereals and a symposium on the nature of fungicidal action.

In a discussion on nematology, Quintin Holdeman, South Carolina Agricultural Experiment Station, presented results on recent research, indicating that some nematode-killing chemicals appear to have selectivity.

Until this research, Dr. Holdeman said that it was generally believed that application of recommended dosages of either of two major commercial nematocides—EDB (ethylene dibromide) or D-D (1,2-dichloropropane, 1,3 dichloropropene mixture)—would result in about the same degree of nematode control.

This belief apparently holds true in respect to the root knot nematode, Dr. Holdeman told the plant pathologists, but his tests against the sting nematode showed EDB to be considerably more lethal than D-D. A newer nematocidal chemical included in the trials—nemagon (1,2 dibromo-3-chloropropane) also proved effective in controlling the sting nematode.

Discovery of a promising new group of nematode-destroying chemicals by two University of Rhode Island plant pathologists was also revealed at the APS meeting.

Reporting upon their successful search for what may prove to be a better way of combatting these soil-infesting plant disease organisms, discoverers A. C. Tarjan and P. C. Cheo said they had found certain of the nonvolatile fatty acids to have outstanding nematocidal properties.

In comparative tests with chloropicrin, the scientists found water preparations of some of the fatty acids to be 8 to 10 times more deadly.

Experiments with one of the acids—undecylenic acid—against tobacco nematode cysts (egg-containing structures) showed that immersion of the cysts for 30 minutes in a 2% acid-water preparation, prevented further hatching of the nematodes.

In other tests that attempted to simulate some of the problems encountered on Long Island where the golden nematode threatens potato production, soil containing tobacco nematode cysts was applied to burlap potato sacks. The infested sacks were dipped in, or sprayed with, the fatty acid preparations. Results showed that another of the group—pelargonic acid—was completely effective as a nematocide in both types of treatment.

The scientists added that these fatty acids are relatively safe to humans, and easy to apply.

The Florida home owner who has kept his lawn green and growing by successfully fighting back against a variety of insect and plant diseases, should add the name "nematodes" to his list of enemies, the APS meeting group was told.

A recent analysis of the nematode content of 135 soil samples by research scientists of the U.S. Department of Agriculture and the Florida Agricultural Experiment Station has turned up at least four important nematode enemies of Florida turfs.

Making up this quartet of soil-infesting disease organisms are the sting nematode, the lance nematode, the spiral nematode, and the stubby-root nematode, it was reported. Several ring nematodes were found frequently, but not usually in such numbers as to pose a serious threat to turf grasses.

The sting nematode, which along with the lance nematode, proved to be the most common species found in soil samples, can seriously damage stands of Bermuda, St. Augustine, Centipede, and Zoysia grasses by attacking the roots. The lance nematode proved to be the most destructive of these parasites to St. Augustine grass. Both spiral nematodes and stubby-root nematodes were most damaging to Bermuda and Zoysia grasses.

The promise of a method of controlling brown spot, an important disease of corn in much of Southeastern United States, has resulted from studies of the disease by James W. Broyles of the Mississippi State College, it was reported at the meeting.

Mr. Broyles found that the fungus could infect corn at any stage of growth between seedling and silking, but that greatest damage occurred to corn infected when 35 to 45 days old. In his experiments, corn infected on the 39th day turned out a total loss because of stalk breakage—the result of this stalk-weakening infection.

The plant pathologist told his fellow scientists that infection occurs in the growing point of the corn plant. This means, he said, that application of small amounts of an effective fungicidal chemical to the whorls can completely prevent infection.

Mr. Broyles found two chemical fungicides (Orthocide 406 and Fermate) either of which completely controlled brown spot when applied as twice-weekly sprays for four weeks before silking. Fewer more timely treatments greatly reduced infection and loss of corn by stalk breakage.

So far, he said, these controls have been used only in research studies, but he believed that further investigations to establish the most practical farm spray schedules may lead to the chemical control of brown spot disease in seed and field corn.

Black root rot, a major cause of apple tree mortality, can be prevented by treating orchard soil with carbon bisulfide the summer before new trees are set out, was the statement of Carlton F. Taylor, plant pathologist of the West Virginia Agricultural Experiment Station, Kearneysville. He reported that of 56 untreated trees planted from 1942 to 1948, ten had been killed by this disease. In contrast, only one of 71 trees planted during the same period, but treated with carbon bisulfide had been destroyed by black root rot.

R. S. Cox, a Florida scientist, reported on how he has shown Everglades truck farmers how to boost lettuce yields by controlling a number of diseases. Everglades soil and climate are just right for lettuce, he said, but a long list of destructive diseases, headed by downy mildew fungus, has kept it in the background as an important crop.

Mr. Cox, of the Everglades Experiment Station, Belle Glade, said control of downy mildew had increased lettuce production 64%.

Twice-weekly sprays with the fungicide zineb boosted income from an acre of lettuce nearly $500 — from $868 to $1,350. Enough zineb for 10 treatments cost only $25 an acre.

Mildew control resulted in only 25% more marketable heads, but the greater size of sprayed heads made the big difference in per acre income, he said.

Mr. Cox tried several commercial fungicides but zineb proved best when he judged them from the combined standpoint of disease control and lack of toxic damage to the plants. He started treating on January 7, and completed his work on February 15.

Good eradicants for a trio of almond tree diseases have been turned up in experiments by plant pathologists of the University of California, it was reported by E. E. Wilson and J. M. Ogawa. The scientists said they had had a good deal of success eradicating brown rot, coryneum blight, and a scab disease with a variety of organic chemical sprays.

Brown rot, probably the most destructive fungus attacking California almonds, was effectively controlled with dormant season sprays of sodium pentachlorophenate, of dinitro-o-secondary amyl phenol, and of a mixture of the two. In each case, Wilson and Ogawa applied these materials as water sprays—1.7 lb. active chemical in 100 gal. water.

On the average, 90 to 98% of the conidia—the source of the disease inoculum that carries over from year to year in infected twigs—was eradicated by a single January treatment. Blossom infection on these treated trees was reduced 80 to 90%.

Coryneum blight and scab, also fungus diseases, were best controlled with a dormant season spraying with N - Phenylmercuriethylenediamine. Applied at a concentration of a fourth-pound of active chemical in 100 gallons of water, the treatment reduced the next season's fruit infection with blight by 90% and with scab by 60%.

Internal browning, a serious ripening disorder of tomatoes in Northeastern States and Florida, costing American growers and handlers as much as $100,000 a year, has been shown to be caused by the highly infectious tobacco mosaic virus.

John S. Boyle, Pennsylvania State plant pathologist, who demonstrated the cause of internal browning, said that he had been able to spread the disease by introducing a small amount of the juice from a diseased fruit into a healthy fruit, or by rubbing the juice on the stem surface of a healthy fruiting plant. The virus had earlier been suspected to be the cause, but up to now direct proof had been lacking.

Although no practical control of this virus is yet known, Dr. Boyle says that its identification serves as a good starting point for control-aimed research. The virus commonly occurs in such weeds as horse nettle, ragweed, Canadian thistle, and plantain growing near infected tomato fields.

The virus affects the fleshy tissue inside the tomato, and symptoms are not apparent until the fruit is cut open. However, when fruit becomes severely infected, gray, sunken patches may occur on the skin of green tomatoes, and green or yellow patches on ripe fruits.

That virus-disease infection can cut yields of Ladino clover in half was reported by three USDA scientists at the phytopath meeting. Greenhouse and field studies by K. W. Kreitlow, O. J. Hunt and H. L. Wilkins of the Agricultural Research Service indicated that losses from virus infection range from 40 to 50%, much more than was previously believed to occur.

Dr. Kreitlow, in reporting his findings, said that extensive virus damage is often obscured because of the way in which Ladino clover is used. With cash crops such as corn and wheat, yields—and yield reductions—can be meausred precisely at harvest in bushels per acre. But forage crops such as Ladino clover are grazed or harvested several times a year, and they are usually grown for a period of several years without accurate production measurements. Disease damage in pastures often causes little concern until the stand deteriorates or is lost.

Dr. Kreitlow and his co-workers conducted their experiments at the Department's Plant Industry Station, Beltsville, Md. To determine accurately the effect of virus infection, they tested artificially-infected and healthy Ladino clover clones (plants grown from cuttings), all of which had been derived from a single plant. In this way, it was possible to compare genetically-identical healthy and diseased plants.

In the greenhouse, where 320 healthy and 320 diseased plants of a single clone were twice harvested, dry weights of the harvested forage showed that yield from virus-infected plants was reduced an average of 48.4%, and flowering of the plants was reduced by 31.7%.

In field plot experiments with comparable clonal material, virus infection reduced the yield of plants from one clone by 40.2% and those from another clone by 53.9%.

SULPHUR

(Continued from page 1)

Of the balance of the supply, 390,000 tons represented sulphur recovered from gases, 400,000 tons sulphur contained in pyrites, and 410,000 tons sulphur in various forms from other sources.

Since sulphur is used extensively throughout the industry and agriculture, the rise in sulphur production and demand reflects the general high level of the U.S. economy, Mr. Williams said.

The increased supply of sulphur stems from a stepped-up expansion program begun some five years ago. Since mid-1951, seven new Frasch process mines have been placed in operation and numerous projects have been added to recover sulphur in various forms and from other sources including sour natural gas, refinery gases, smelter gas, pyrites and surface deposits.

One new Frasch process mine was brought into production in 1955—the Chacahoula property of Freeport. There now are 13 Frasch process mines being worked on the Gulf Coast of the U.S.

The largest producer was Boling dome of Texas Gulf Sulphur Co., followed by Freeport's Grande Ecaille and Garden Island Bay mines. Additional output came from smaller mines of Texas Gulf, Freeport, and the mines of Jefferson Lake Sulphur Co., Duval Sulphur and Potash Co. and Standard Sulphur Co.

Plans for development of one new sulphur deposit were announced during the year and exploratory drilling was conducted in several areas.

The new deposit, known as Lake Pelto, is located in the shallow waters off the Louisiana coast about 60 miles southwest of New Orleans. It lies beneath 6 to 8 feet of water and is separated from the open gulf only by a narrow strip of land.

Freeport is working on plans to install a mining plant and other facilities which will mark the first attempt at mining a sulphur deposit entirely under water and in an area where no land whatever exists.

A second known deposit, plans for the development of which have not yet been announced, is Block 18 of Humble Oil and Refinery Co. The dome is some 6 miles off the Louisiana shore and under 40 feet of water.

NEW SUNFLOWER

DALLAS — The Texas Research Foundation has developed a new variety of sunflower which may soon enjoy a prominent place on southwestern farms. The new variety grows from three to five feet high and in field tests has produced 2,900 lb. to the acre. The seed heads are six inches in diameter. The oil content is 30% and the protein 22%.

Limitations on Bushels or Pounds Per Acre Appearing On 1956 Political Horizon

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—The long-contemplated threat of an imposition of bushelage or poundage controls on the basic commodity crops, has now become more than a mere cloud on the political horizon.

Last week, the threat assumed major proportions when the chairman of the powerful House Agriculture Sub-committee on Appropriations came out with a mildly disguised announcement that the rigid high price support bloc plan might digress from its acreage control system on which the high price supporters rested their theory.

Extracts from statements by Congressman Jamie L. Whitten (D., Miss.) are regarded as carrying dynamite to all economic approaches to a decision on how to handle the farm problem.

In a general discussion of farm problems, Congressman Whitten said, "In view of high concentrate fertilizers, cutting out acreage with no restrictions on how much can be grown on the remaining acreage will not substantially cut production."

There in a nutshell is bushelage and poundage control on crops supported at 90% of parity—the basic commodity crops of wheat, corn, cotton, peanuts, tobacco and rice.

Congressman Whitten has been one of the most vigorous supporters of rigid high price supports, particularly on cotton. That group in the past has placed reliance on this position with a contention that through acreage controls they could hold production in line with demand. Now they find that acreage restrictions necessary to bring production of wheat, cotton and corn into line with demand and at the same time to eliminate the mounting surpluses, would be so radical that it would materially reduce farm income in their constituencies.

Their approach now appears to be that of maintaining the fiction of rigid high 90% of parity supports for these major crops but watered down either on the basis of top support for only the better grades of the crop—or as Mr. Whitten would propose—no further cuts in acreage but a limitation on the number of pounds or bushels which may be marketed in a crop year from the acreage authorized for production and price support eligibility.

In short, Mr. Whitten would throw all scientific, technical and operating improvements into the discard to maintain the status quo. He would ditch the advances in production economics and land use economy in favor of further restrictions in the use of fertilizer and pesticide materials. These practices which lower per unit cost of production to efficient farmers would be set aside in favor of a device which would retain the fiction that 90% of parity support is a good thing for the American farmer.

This proposition coming from as influential a member of Congress as Mr. Whitten cannot be ignored.

The Whitten economic philosophy is somewhat obtuse. He argues that the only way that cuts in U.S. production would cut world supply is for our commodities to continue on the markets of the world at competitive prices. The Mississippi Democrat, however, would prefer to meet world competition through maintained 90% of parity support for the U.S. crop and an export subsidy to meet world markets.

He ignores the possibility that the U.S. cotton and wheat farmer may on even reduced acreage and through modern scientific practices produce those crops at lower cost per unit, the pound or bushel, from greatly reduced acreage and meet world competition—without high rigid 90% of parity supports.

The dilemma in which the Mississippi Democrat finds himself is no different, however, than that of his Republican counterparts who insist that wheat must be supported at 90% of parity.

In a soliloquy reminiscent of Hamlet, Mr. Whitten engages himself in some reflections of "facts overlooked."

He says, in part, "Modern parity formula divorced supports from costs the farmer pays, and now is a percentage of the average price the farmer has received for the past ten years. Thus increasing costs will not be reflected."

Therein is found the weak spot of the high price support philosophy. At no time has it ever been proposed by the price support philosophers that the basic parity concept be reviewed and that the level of support be geared to costs of production which have changed markedly since 1909-14 base for the big crops such as wheat, corn and cotton, to name but half of the basic group.

In economic circles, the Whitten statement can be construed only as a cry of distress in a wilderness. Top USDA officials are now admitting that unless some unforeseen way can be found to capture our export market for cotton within three years, other foreign production at lower prices will have driven U.S. cotton out of world markets.

These farm politicians speak as if they were unaware that within industry there are responsible friends of the U.S. farmer who have a diagnosis and prognosis of the problem. Within USDA there are many able, sincere men who can chart the disaster ahead unless there is a decided change in the political philosophy on Capitol Hill concerning the farm problem.

There are few if any indications that the farm politicians will succumb to economic proposals at the forthcoming session of the national legislature. On the contrary, it will be a vote-buying scramble between both parties, probably with some compromise between the Republican and Democratic high price support folks to retain rigid high price supports. This would be done on the basis of quality of a crop plus the mounting threat that influential Congressmen such as Mr. Whitten may force through an additional restraint of bushelage or poundage marketing from land allotted for production.

To discard the advances of the chemical industry now in the farm field would be similar to a nation which proposed to outlaw the scientific discoveries of Pasteur or Thomas Edison or to outlaw the internal combustion engine. It is the same type of thinking. But from whence it now comes it must be considered as a real danger.

VEGETABLE ACREAGE REBOUND

BLACKSBURG, VA.—A longtime, continuous downward trend in Virginia vegetable acreage apparently has halted. Agricultural economists at Virginia Polytechnic Institute say since 1950, when vegetable acreage reached a low of 111,000 acres, it has rebounded to about 120,000 acres.

E. Earle Lacy

Hugh M. Griffith

Virginia-Carolina Opens Sales Office In Rochester, N.Y.

RICHMOND, VA. — Virginia-Carolina Chemical Corp. opened a new fertilizer sales office at Rochester, N.Y., on Jan. 1, according to an announcement by C. Cecil Arledge, vice president of the firm. In addition, V-C is enlarging its Rochester production facilities.

Both the office and plant are located at Lyell Avenue and Barge Canal, V-C's base of operations in Western New York for over twenty years. The new facilities will serve farmers and V-C dealers in New York and Northern Pennsylvania.

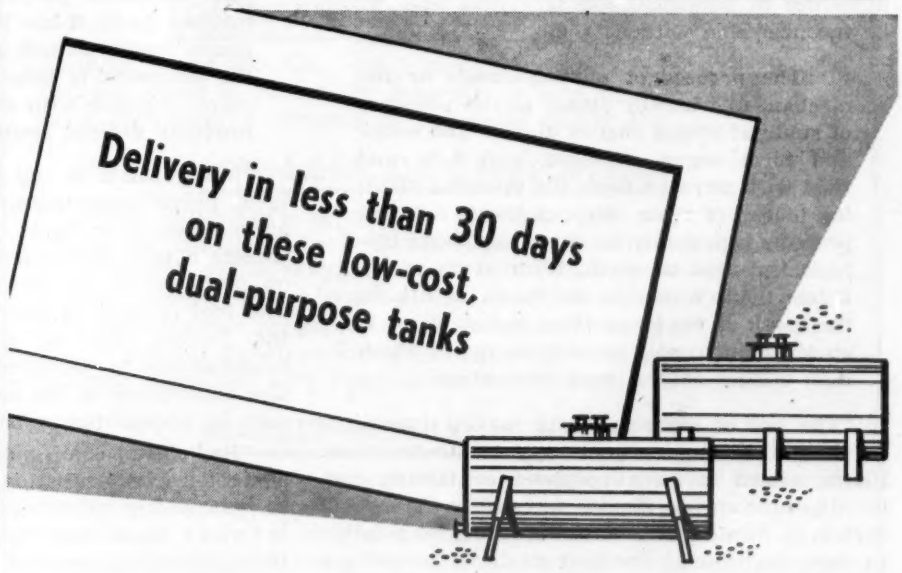
E. Earle Lacy will head the new sales office, and Hugh M. Griffith has been appointed factory superintendent.

Mr. Lacy formerly served as assistant manager of V-C's Carteret, N.J., sales office. A native Virginian, he joined V-C in 1929 at its home office in Richmond, Va., was transferred to Carteret as chief clerk in 1938.

Mr. Griffith also comes to Rochester from Carteret. He joined V-C in 1947 at Wilmington, N.C., his home town, and later served as assistant foreman at Portsmouth, Va. He was transferred to Carteret as assistant superintendent in 1951.

ACQUIRES RARE EARTHS PLANT

SAINT LOUIS, MICH. — Michigan Chemical Corp. has acquired the assets of Saturnium Corp. and will enter the rare earths field. Dr. Herbert J. Fleischmann, formerly head of Saturnium, will become technical director of Michigan Chemical's Rare Earths Division, according to an announcement by Theodore Marvin, president of Michigan Chemical.



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Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

Roundup on Radioisotopes

References are frequently made about the use of atomic energy in agricultural research, but seldom does one see a roundup of information that tells a broad story about how the pesticide and fertilizer industries may benefit from application of such methods in finding the answers to age-old questions.

In a recent talk before the Institute of Atomic Energy at Lincoln, Neb., Dr. Paul B. Pearson, chief of the biology branch, division of biology and medicine, U.S. Atomic Energy Commission, summed up much of the information now known on atomic energy as it applies to agriculture.

Dr. Pearson expressed doubt that radioisotopes will be used directly by farmers, but at the same time, these materials may play a major role in the solution of agricultural problems and may also change the pattern of agricultural practices in the U.S. and in other countries as well.

Soil scientists, he pointed out, can find out for the first time, through use of radioisotopes, what proportion of various nutrients the plant derives from the soil and what proportion is taken up from applied fertilizer materials.

"The use of radioactive isotopes for research in ion movement or transport by plants is twofold. They serve as superior analytical tools, extending the sensitivity and specificity and increasing the ease of analysis beyond what can be achieved by conventional analytical methods. Radioactive isotopes have vastly accelerated research into the mineral nutrition of plants and have made possible an understanding of the dynamics of biological ion transport that would be inconceivable without them.

"The process of photosynthesis or the mechanism whereby plants in the presence of sunlight utilize carbon dioxide and water and form sugar, starches, and fats, and then with nitrogen form the essential building blocks of some thirteen amino acids as proteins is probably the most important biological process on earth. Without photosynthesis there would be no forms of life on the earth as we know them today. There is an abundant supply of solar energy of which man utilizes only a small percentage.

"The use of radiocarbon-14 makes it possible to study the complex pathways of bio-synthesis. Plants grown in an atmosphere containing carbon-14 in the carbon dioxide will utilize the labeled carbon in forming foodstuffs. It has been possible to show that among the first products formed are 5- and 7-carbon sugars. The complexity of the system is apparent in the fact that in a few seconds a plant will fix carbon dioxide in the form of 10 or more compounds in quantities that can be isolated and identified. Radiocarbon makes it possible to distinguish between those compounds that are present before exposure to the radioactive atmosphere and those formed during the experiment.

"Such are the secrets of nature that will be answered by the atom and they most certainly will presage changes in farming and agricultural practices.

"Entomologists have successfully eradicated screwworms from a limited area in one of the Caribbean islands. Male flies were made sterile by radiation and then dropped from planes to mate with the native female flies. Since the female mates only once no offspring are produced if she mates with an irradiated sterile male.

"Successful attack by chemical means requires knowledge of the habits and life cycle of the insect, as well as information on its physiology and metabolism. Insects may be tagged with Cobalt-60, for example, and their flight range, migration, and overwintering habits determined. More accurate estimates of the population of an insect species can also be made by this method.

"Tagging the insecticide permits evaluation of the efficiency of the method of application, study of its mode of uptake, and metabolism by the insect. Such information makes a definite contribution to the development of more effective agents and methods of use. How insects develop resistance to specific insecticides such as DDT is being investigated by tagging the compound with radiocarbon.

"Systemic insecticides and pesticides promise significant gains in the continuing war on plant and animal pests, but basic information on the uptake, translocation, and metabolism of these compounds by the host plant or animal is essential. Radioactive tracer techniques are indispensable in obtaining this information.

"Crop production may be significantly increased in the future by growth-regulating compounds, because of their ability to advance or retard crop maturity or through chemical weed control. Here again it is of manifest importance to have fundamental knowledge of the absorption and translocation mechanisms involved in the crop plant. Tagging the compounds of interest with radiocarbon or radioiodine makes it possible to follow their absorption and translocation and to measure the total uptake, even though the amounts involved are as small as one-millionth of a gram.

"It is also essential to know that the compounds used on edible crops are not changed after application into products detrimental to animals or man. Tagging the compound makes it possible to identify any such metabolic products. For example, by tagging 2,4-D, it has been shown that bean plants readily absorb the herbicide and that the compound is distributed throughout the plant, together with at least two additional products derived from it.

"Maintenance of soil fertility and crop yields is of prime importance, and soil scientists and agronomists have found in the use of radioactive tracers a tool that opens new avenues of attack on problems of soil-fertilizer-plant relationships. The tool is used in basic research to determine the factors affecting nutrient absorption and translocation by plants or the mechanism of fixation and release by the soil of important nutrients such as phosphorus or calcium.

"Radioisotopes of most of the elements important in plant nutrition enable the investigators to follow the movement of these elements in minute quantities from the nutrient solution throughout the plant and to study the mechanisms involved in uptake and metabolism."

Volume Three Begins

With this issue of Croplife, we begin our third year of publication: Volume 3, Number 1. Such an occasion, coinciding as it does with the dawn of 1956, prompts Croplife's staff to look back over the past couple of busy years and also ahead into the promising years to come. The view in both directions is gratifying.

The finest kind of cooperation from the industry, the colleges, the universities and federal and state agencies has been enjoyed and we wish at this time to express our great appreciation for the friendly spirit shown by all.

The future holds promise of greater things for the industry in all its segments. The trade's weekly newspaper expects to keep pace with all new developments and to continue its function of disseminating important information throughout the industry.

So, in this first issue of 1956, we extend to all of our friends in the trade a hearty wish for a prosperous and thoroughly happy new year!

Croplife

ABPA *Member of Business Publications Audit*

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

n. 3-4—Annual Nebraska Fertilizer Dealers Conference, Activities Bldg., University of Nebraska College of Agriculture, Lincoln.

n. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York; W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

n. 5-6—Second Annual Mississippi Insect Control Conference, Mississippi State College.

n. 5-6—Texas Fertilizer Conference, Texas A&M College, College Station, Texas.

n. 6—Northeastern Weed Control Conference, Hotel New Yorker, New York, R. J. Aldrich, Rutgers University, Secretary.

n. 10-11—Eighth Annual North Carolina Pesticide School, North Carolina State College, Raleigh.

n. 11-12—Wisconsin Insect Control Conference, Lorraine Hotel, Madison, Wis.

n. 15-17 — New Mexico Grain & Feed Dealers Assn., Annual Convention, Hilton Hotel, Albuquerque, with Special Portion for Fertilizer and Farm Chemical Dealers; H. B. Hening, Albuquerque, Secretary.

n. 15-18—Northwest Vegetable Insect Conference, Portland, Ore.

Jan. 16-18—Southern Weed Conference, Ninth Annual Meeting, Hotel Jung, New Orleans; Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, Secretary-Treasurer.

Jan. 16-20—Minnesota Weed & Seed Inspectors Short Course, University of Minnesota, St. Paul.

Jan. 17—Georgia Plant Food Educational Society, Annual Meeting, University of Georgia, Athens, Ga., Fielding Reed, American Potash Institute, Mortgage Guarantee Bldg., Atlanta 3, Ga., secretary-treasurer.

Jan. 18—Western Oregon Fertilizer Dealer Meeting, Sponsored by the Pacific Northwest Plant Food Assn., Oregon State College, Corvallis, Ore.

Jan. 18-20 — Western Cooperative Spray Project, Imperial Hotel, Portland, Ore.

July 19-20—Southwestern Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

Jan. 26-27—Custom Spray Operators Training School, University of Illinois.

Jan. 26-29 — Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Jan 27—Colorado Agricultural Chemicals Assn., Cosmopolitan Hotel, Denver.

Jan. 30—Wisconsin Fertilizer and Lime Dealers Conference, Memorial Union, University of Wisconsin, Madison, Wis.

Jan. 30-31—National Cotton Council of America, Annual Meeting, Buena Vista Hotel, Biloxi, Miss.

Jan. 30-Feb. 3—Purdue Pest Control Operators School, Purdue University, Lafayette, Ind.

Feb. 6-8—Agronomy Section, Association of Southern Agricultural Workers, Atlanta (Ga.), Biltmore Hotel; W. E. Colwell, North Carolina State College, Secretary.

Feb. 6-8—Cotton States Branch, Entomological Society of America, Biltmore Hotel, Atlanta, Ga. W. G. Eden, Alabama Polytechnic Institute, Auburn, Ala., secretary-treasurer.

Feb. 7-9 — National Garden Supply Trade Show, Kingsbridge Armory, New York City.

Feb. 14-16—Agricultural Chemicals Conference, Lubbock, Texas.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Feb. 15-17 — Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

Feb. 16-17—Middle West Soil Improvement Committee's annual joint meeting of the fertilizer industry and Universities. Edgewater Beach Hotel, Chicago.

Feb. 22-24—Fifth Annual Ohio-Indiana Agricultural Aviation Conference, Ohio Union, Ohio State University, Columbus.

Feb. 22-24—Alabama Pest Control Conference, Alabama Polytechnic Institute, Auburn, Ala.

Feb. 22-24—Midwestern Chapter, National Shade Tree Conference, LaSalle Hotel, Chicago, Noel B. Wysong, Cook County Forest Preserve, River Forest, Ill., Secretary.

March 6-7—Fifth Annual Western Cotton Production Conference, Fresno Hacienda, Fresno, Cal.

March 14-18 — National Agricultural Chemicals Assn., Spring Meeting, Hollywood Beach Hotel, Hollywood, Fla., Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

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HELP WANTED

SOUTHERN NITROGEN COMPANY

Southern Nitrogen Co., Inc., currently building a $14 million nitrogen plant in Savannah, Georgia, is now putting together its basic organization. Among its personnel needs are:

MANAGER OF DEVELOPMENT

Extensive experience in product development and/or economic evaluation is desired, Technical background in advanced chemistry or chemical engineering with subsequent experience required. Responsibilities will comprise the direction of the Company's technical, market research, and promotional resources in product and/or market development requiring perspective in the chemical industry combined with imagination and energy.

MARKET RESEARCH ANALYST

Two to three years' experience in chemical market research preferably of diversified type is desired. Educational background must be in chemical engineering or chemistry. Duties will be to research markets for company's initial products with trend toward product and market development later. Extensive travel will be required.

TECHNICAL SERVICE REPRESENTATIVE

Requirement includes a thorough understanding of the merits of various types of ammoniating solutions based on extensive experience in their application to mixed fertilizers. Experience in the Southeastern section of the U.S. and a degree in Chemistry or Chemical Engineering is desired. Duties will be to counsel company personnel and customers in the optimum applications of products and the technology of their use, involving extensive travel in a limited geographical area.

SALESMEN

Experience in selling nitrogen products preferably or other fertilizer materials to fertilizer manufacturers in the Southeastern area of the U.S. is required. Salesmen will be expected to become familiar with the technology of ammoniating solution use in mixed fertilizer manufacture. Duties will be to sell the company's nitrogen products to fertilizer manufacturers, requiring extensive travel over a restricted geographical area.

In reply state personal data, education, experience, salary history or requirement. Inquiries will be held confidential if requested.

Address to Ad No. 1348, CROPLIFE, 551 Fifth Ave., New York 17, N. Y.

A NEW SERVICE for Advertisers and Agencies . . .

CROPLIFE does more than offer the only *weekly* advertising medium to advertisers and advertising agencies interested in reaching the agricultural chemical field. The complete services of Croplife's Home Office in Minneapolis and its full-time branch offices in New York, Chicago and Kansas City are available for the servicing of advertisers and agencies.

Requests for market information, statistical analyses, industry news tie-ins and other service will be handled by experienced full-time staff members of the company.

Working under the direction of Croplife's seasoned and experienced editors in the Minneapolis Home Office is the Advertiser Service Department, headed by a trained statistician and market research man who directs the work of a library and research staff of five persons.

Croplife's advertising sales staff includes full-time staff members in each branch office, with several years of experience in businesspaper advertising, whose first objective is to be of service to advertisers and agencies interested in the field served by Croplife. These representatives know agriculture thoroughly and their experience in industries and organizations serving the agricultural field qualifies them highly for their advertising sales and service assignments. Included in this wealth of experience are previous assignments with agricultural experiment stations, the United States Department of Agriculture and daily and weekly newspaper work in agricultural communities.

In the nation's capital, Croplife has its own Washington correspondent, a veteran capital newsman who interprets the Washington scene in terms of short and long range impact on the industry. In looking behind the government news releases he is able to report valuable information on trends and significant behind-the-scenes activities.

Croplife's foreign manager is alert to overseas developments of interest to the agricultural chemical industry and handles requests from advertisers and agencies for information and service on the foreign market.

Advertisers and advertising agencies interested in the agricultural chemical industry are invited to make use of this advertiser service program.

WRITE—WIRE—PHONE our nearest office for the complete story of how Croplife and its complete staff and facilities can be of service to you in planning and producing your advertising to the agricultural chemical industry.

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